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Contents

29 COVER STORY

100+ FREE AND OPEN SOURCE SOFTWARE TO SUCCEED IN THE DIGITAL ERA

Use these popular free and open source software to automate virtually every nook and corner of your business processes and without burning a big hole in your IT budgets

30 Nine Free Tools to Manage Social Media for Your Business
31 Present Anywhere, Anytime with Zoho ShowTime
32 5 Linux Alternatives to Windows and Mac OS
34 How Digital Signage can benefit Small Business Owners
37 Edit Your Photos With Free Yet Professional Online Tools
38 8 Tools to Manage Customers
39 10 Open Source Tools for Cloud Infrastructure and Management
40 6 DIY Mobile App Development Platforms
42 20+ Free Popular Tools for Enhancing Personal Productivity
46 12 Free and Open Source Bandwidth Monitoring Tools
48 8 Top Open Source Firewalls to Secure Your Buisness
52 10 Open Source eCommerce Platforms
54 Marketing Automation Tools that Promote Enterprise Growth

TECH AND TRENDS

10 Why There's a Tremendous Increase In The Consumption Of Digital Content
12 How Enterprise Apps Increase Workforce Productivity
13 Tapping Into Cloud: Three Quick Steps For An Enterprise To Adapt
14 The Latest Fad in Data Centers: Leaf and Spine Architecture
16 Hybrid Cloud - A New Content Divide Emerges
18 Cloud Is Not A Magic Button
20 'Zone Defense' Strategy for Securing IT Infrastructure
22 How face and voice recognition Technology can transform PDS in Rural india
23 Big Data: A Strategic Lever to Drive Growth

MOBILITY CORNER

24 Handle your Finances Smoothly with these Top Five Apps

SMB CORNER

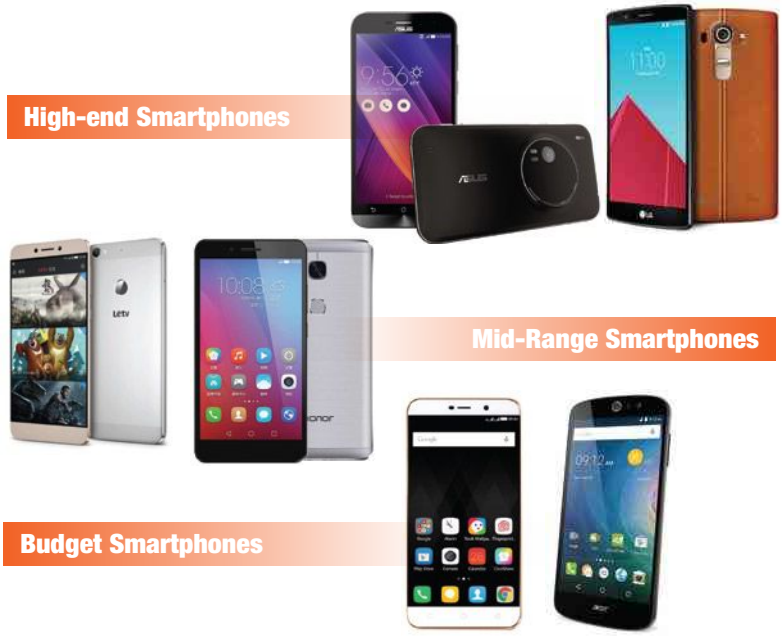
25 Helping BigChemist with Open APIs to Integrate Order Flow from Public Cloud

26 SMEs Must Think Beyond Traditional Marketing Practices to Succeed

MARCH 2016

SHOOTOUT

63 Choosing the Best Smartphone For Your Need



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- SPOILER ALERT
- MYSTERY OF MORTLAKE MANSION
- WIZARDS SPELL
- TABLETOP DEFENSE

LINUX DISTROS
• Ubuntu 15.10 • Korora

HANDS ON

57 6 plugins that help solve image problems in Wordpress

58 8 Ways IT is Empowering Teachers

GADGETS N GIZMOS

79 TAG All-in-One HDD Docking Station | Digisol DG- VG -4300NU | ENRG Actiwear

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THE BEST BUDGET LAPTOP

Q: I am planning to buy a budget laptop with 1 TB HDD and have a budget of 25 to 30K.

- Ratan D

You can make your choice from the below given options:

- Dell Latitude 15 3000 3550
- Lenovo G50-80 80E502Q8IH
- Asus X552CL-XX220D X Series X552CL XX220DHP 15-ac125TU

All three are excellent devices and conform to your budget.

- Ashok Pandey, CyberMedia Labs

REPLACING AN HDD WITH AN SSD

Q: I want to replace my existing laptop HDD with SDD, but have some doubts. Could you explain some of the benefits of using SSD. I have a budget of 4 to 5 K.

- Umed S

SSD is always a better choice in comparison with HDD in terms of reliability and performance. These drives come with flash storage. Here are some SSD options that you could look at...

- Kingston V300 240 GB
- Transcend SSD 2.5 256 GB

- Ashok Pandey, CyberMedia Labs

LAPTOP HDD IN PLACE OF DESKTOP HDD IN A DESKTOP PC

Q: I want to use my additional Seagate momentous 5400rpm 500 GB SATA laptop HDD in place of desktop HDD in my PC as my existing 3.5" 160 GB HDD in PC, which is seven years old, is not working properly. It loses connection in between some operations and it also makes a lot of noise like some old tape recorder.

- Robin Q

An SSD can work in place of your old HDD even on your desktop. Just connectivity options may differ from the old PC's motherboard to the new SATA SSD, so please check that.

- Ashok Pandey, CyberMedia Labs

RAM ISSUES

Q: Usually, there are 2 RAM slots present in the laptop, and one of them is occupied with 4 GB of RAM, so how much of expandable memory is supported? As per tech specs it shows 8 GB of RAM is supported when both RAM slots are occupied in the laptop. So how much does one slot of RAM can it really support? Can it support 8 GB of RAM in one slot?

- Raj S

Yes, typically laptops come with two RAM slots, and there are chances both slots are occupied by the given RAM. If the tech specs suggest that you can add up to 8GB RAM, it means you can add two RAMs on 4GB capacity in each slot.

- Ashok Pandey, CyberMedia Labs

LAPTOP FOR EDITING VIDEOS

Q: I spend a lot of time editing videos and photographs and I want to buy a new laptop for this. Can you tell me what specs to look for?

- R. Jagtiani

If you want to edit videos and pictures then you need a top of the line CPU – Intel Core i7 or at least 3rd generation Intel i5, a high end graphics card like Nvidia GeForce GTX 780M SL or AMD Radeon HD 7970 to handle intense graphics, and definitely a higher resolution screen (Full HD). You can get such specs from almost all major brands like HP, Samsung, Lenovo. You can also enjoy gaming on these power machines at times.

- Anuj Sharma, PCQuest Labs

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HYBRID SIM CARD SLOTS

Q: Who started this hybrid sim/sd card trend and why are companies following it like a herd of foolish sheep in India. Because of this, I am not able to purchase a good value for money smartphone.

- Malini K

Companies are following the hybrid sim/SD card trend in India because they are trying to attract consumers looking for dual SIM as well as those who want to extend the memory. A few users only look at smartphones with higher memory while others for dual-SIM so this way they can target both. And for you, we can suggest Honor 5X. It has Dual-SIM as well as microSD slot, moreover it has good specs and it is a value for money smartphone.

- Ashok Pandey, CyberMedia Labs

DEDICATED GRAPHICS CARD GOOD OR BAD ?

Q: I have heard that laptop with graphics card gives display problems, and I also don't want a laptop with GC, and yet I was not able to find a laptop without GC in laptop having i5 or i7 processor.

- Ramnik J

It's good if you have a dedicated graphics card, as it takes care of everything displayed on your screen, else your CPU will take over and performance will be a little compromised. Laptops having i5 or i7 processor come with GPUs so that you get better performance.

- Ashok Pandey, CyberMedia Labs

LAPTOP FOR EDITING VIDEOS

Q: Can RAM with different speeds (in terms of MHz) work as one in a laptop or desktop PC?

- Vidya R

No, it's always advisable to use same speed of RAM, else the higher capacity RAM will merge with the lower one and then your higher speed will be of no use. Also, both RAM should run at the same voltage, else it might be possible they do not support your PC.

-Ashok Pandey, VyberMedia Labs

SMALL MFP NEEDED

Q: I am running an office and have a medium print requirement? Please suggest me some MFP options?

- Vijay K.

HP LaserJet M1005 Monochrome Multifunction Laser Printer and HP LaserJet Pro MFP M128fw Printer are a good choice for bulk printing. Canon has also launched its range of Laser MFDs- the MF200 series earlier this year for the SOHOs and SME segment. The series includes MF 221D, MF 217W, MF 226dn and MF 229dw that are loaded with a host of productivity and convenience features.

-Anuj Sharma, PCQuest Labs

Form IV

(See Rule)

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What makes 3D printers exciting is that they can be used by any manufacturer, small or large, and even designers or architects to quickly print a wide variety of things

Anil Chopra, Editor
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3D Printing: Future of Manufacturing

Digital technologies have disrupted many sectors, and now, it's time for the same to happen to the manufacturing industry. The technology that's likely to make it happen are 3D printers—devices that can print just about anything. According to a research firm, Canalys, 3D printing could become a $16.2 billion industry by 2018.

Today, 3D printers are available as desktop or industrial printers, and can either be imported or procured from a few local manufacturers. Large players have also started entering this space, which makes this space even more exciting, because it would increase the availability of 3D printers to a much wider audience, and would probably overcome the challenges associated with getting clearances for importing them.

Coming back to my original point of how they're going to disrupt the manufacturing sector, here are few reasons:

Greater customization: Customers today are demanding greater customization in the products that they buy and are just not satisfied with the "made for everyone" approach. 3D printers could address this requirement because that's what they're actually meant to do—print custom designs faster.

Lower cost of supply chain and imports: The supply chain is a critical part of any manufacturing setup, where companies import raw material from suppliers. With 3D printers, some of the parts could be printed locally, eliminating the need for imports. In fact, according to PWC, due to 3D printers, 40% of air and shipping cargo market is under threat.

Lower inventory cost: A key cost for any manufacturing sector is maintaining an optimum balance of inventory. It's the most challenging task for any manufacturing company because too much inventory blocks capital and too little can hit production schedules. Maintaining an inventory of spares is another challenge because you never know when you'll need them, and yet you have to keep them handy. With 3D printing, some of this inventory can be reduced because you just need to keep blue-prints of the parts and print them only when required. This can reduce both the cost of inventory as well as the cost of spares to end customers.

Identify Genuine Parts from Duplicates: 3D printing technology can embed codes inside printed products, which can't be traced because they're inherent to the product. They can only be scanned with a special scanner. This can help the genuine parts industry prevent fake and duplicate products from impacting their market.

More versatile: 3D printers support a greater variety of materials, allowing you to print a wide range of products for many industries. Apparently, the aviation industry 3D prints many parts used in aircraft. There's a lot of scope for 3D printing in the healthcare sector, where 3D printed prosthetic limbs are already a reality, and experiments are on to print live human tissues and other body parts.

It's for everyone: 3D printers aren't just for specialized industries like aviation. They can be used by anybody, including small companies and even professionals like designers and architects.

In a nutshell, 3D printers have come of age and you can expect many new products and launches in the coming financial year. This is the right time for the manufacturing sector to start doing their pilots.

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WHY THERE'S A TREMENDOUS INCREASE IN THE CONSUMPTION OF DIGITAL CONTENT

Smartphones have changed the way people consume digital content, resulting in enormous increase in the consumption in the form of apps, videos, and websites

– Govind Bansal, Co- Founder, Aqua

The multimedia consumption capabilities of this generation have increased manifold. This has resulted in a tremendous increase in the consumption of digital content in the form of apps, videos, and websites on the mobile. Mobile usage as a whole account for 60% of the time spent in consuming new age media content. It's interesting to find that today mobile apps make up about 47% of internet traffic and 8% of digital consumption traffic originate from mobile browsers. It is projected that the number of smartphone users will grow from 150% to 250 million by 2020. Growth in the usage of mobile phones is primarily driven by social media, surfing and app downloads.

Govind Bansal
Co- Founder, Aqua

"60% time being spent in consuming new age media content through mobile apps, make up about 47% of internet traffic and 8% of digital consumption traffic originate from mobile browsers."

Various Media and their Consumption Trends on Mobile

Apps & Gaming

There are about 1.6 Million apps in Google Play Store while Appstore has 1.5 million apps. People spend about 42% of their app time on the smart phones on their most frequently used apps. It is estimated that 7 out of every 8 minutes of media consumption are on mobile devices. On an average, every smartphone user downloads 3 apps every month.

In India there is a huge penetration of those playing downloaded games on mobile and it drives the most revenue on both Google Play and App Store, in comparison to other categories of apps. Nearly 52% of the overall population downloads games on mobiles. Moreover, people spend 43% of their time on playing games on their smartphones. In 2014, games

accounted for an enormous 85 of the 700 highest grossing apps on the App Store and Google Play. Due to the a rise in the sales of smartphones and tablets all across the world, the global market for mobile gaming is expected to reach US$ 52.6 billion by 2020, which will eventually change media consumption habits on cell phones, and the subsequent growth in smartphone gaming users worldwide.

Videos

Mobiles have transformed digital video watching to a surprising extent. YouTube alone has billions of views and out of these, 50% views are consumed from a mobile device. The number of hours people spend watching videos on mobile is up 100% and consequently YouTube's mobile revenue is up 2x year on year. Netflix widely went with an iPad app first, and not a smartphone app. Today, a reported 23% of all Netflix subscribers say they have watched on smartphones, and 15% have done so on iPads. Amazon has about 16.7 million Prime subscribers that get unlimited video streaming on Kindle devices and via Amazon's mobile apps. The pay and broadcast TV industries, music labels, Hollywood studios, big tech companies, and major advertisers all have to keep a close eye on this trend.

Social Networking

Facebook is the most used app, in both audience size and share of time spent among each demographic segment. There are almost 1.39 billion monthly active users while 894 million users access Facebook daily on mobile. Social Networking, Games and Radio contribute to nearly half the total time spent on apps, indicating mobile usage is heavily centered around entertainment and communication. In a month, approx 250 million active mobile users contributed 86% of Twitter revenue. 90% of the videos being shared on Twitter are being viewed on a mobile device. 75% of Pinterest usage takes place on mobile devices. Instagram has over 300 million active users sharing over 30 billion photos.

Email

According to a Gartner study, 45% of email opening occurred on a mobile, 36% on the desktop and 19% in a webmail client. Moreover, 74% of smartphone owners use their devices to check emails, and Gmail Apps alone have more than 100 million downloads.

What lead to these revolutionary changes?

Extremely advanced technology, robust hardware accompanied by the very low price of smart phones has resulted in tremendous popularity of mobile devices. In late 2014, the average price of Android mobile phones in the global market dropped to nearly $255. Mobile phones with multi-core CPU, 3G connectivity and GPS can be bought in India at a pocket-friendly price, even without Telco subsidization. Moreover, the launch of iPhones and iPad models nearly twice per year pushed the prices of second hand and older models to affordable levels as well. Therefore, app developers now need to create apps that are not only more feature rich, perform better, and offer a better user experience compared to just a few years ago.

Internet Connectivity

The second pioneering change is that over 100 million people access internet over mobile phones, which is 52 percent of the total internet access as of January 2016, making India world's largest online user country. The entrance of a large number of private internet service providers in the Indian broadband market has allowed people to enjoy low cost internet connectivity on their handsets, either through taking advantage of buckets of data services on demand, by using low-cost monthly unlimited usage plans, or simply connecting to free Wi-Fi hotspots that have now become mainstream in public spaces.

Cloud Infrastructure

The third and most vital of these changes is the commoditization of the cloud, which is gaining stream in India. Also, it is expected that the number of cloud computing subscribers in India is expected to grow rapidly in the next five years. Cloud computing relates to services that are available through an Internet connection and usually on a subscription basis.

Where Will This Revolution Lead To?

- Advertisers will now be focused more on mobile rather than desktops or any other electronic medium
- Video streams, video calls, doodles, files, online social games, music, shopping, microblogging, and movies will continue to enjoy top position
- The app as a collection facility for personal data because of which we see more of customized ads and higher conversion than ever
- Media web services will Increase as we see the number of news and media content downloaded through the internet;

Conclusion

App developers will need to incorporate new technologies to create better applications that will fulfill the demands of a tech savvy generation. □

HOW ENTERPRISE APPS INCREASE WORKFORCE PRODUCTIVITY

Advancements in mobile devices and availability of better communication networks have opened the doors for cloud hosted productivity application providers to develop innovative mobile apps for enterprises

– Nitin Singh Sisodia, Director-Product Management, InsideView

With exponential rise in number of startups and Small and Medium Business enterprises, the demand of productivity applications has witnessed an unprecedented increase. According to Gartner, employees in today's digital workplace use an average of three different devices in their daily routine, which will increase to five or six devices as technologies such as wearable devices and the Internet of Things (IoT) eventually become mainstream.

In the previous decades, most of the enterprise software lacked cross platform capabilities. Users were tied to a workstation and were forced to use pre-configured OS and other software packages. Because of huge dependency on IT departments the cost of maintaining hardware, network and security kept on increasing as the organizations grew. Network bandwidth was a precious commodity in this era.

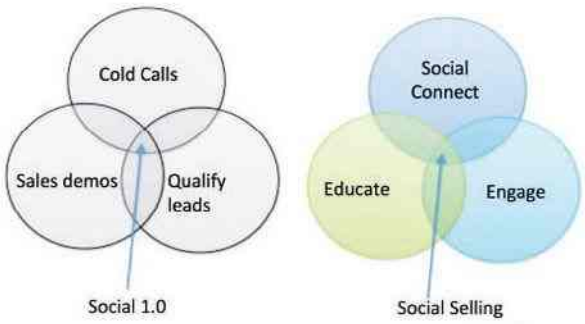
Within tech, this is where corporates shall invest

Worldwide spending on enterprise application software will grow 7,5% to reach $149,9-billion in 2015, increasing to more than $201-billion in 2019, according to the latest forecast from Gartner. Analysts say that long-term growth in spending will be driven primarily by modernisation, functional expansion and digital transformation projects.

Advancements in mobile devices and availability of better communication network opened the doors for cloud hosted productivity application providers such as Google Apps. Users got ubiquitous access to use these tools on the choice of their devices and locations. The cost saving thus achieved changed the dynamics of enterprise application market and led to new business models for buying, selling and deploying these applications.

Enterprise apps can quickly drive efficiency and effectiveness in different areas of the enterprise: sales and marketing, training, and operations. Sales and marketing to improve the face-to-face sales experience with the latest information and messaging; training to deliver just-in-time, in-context learning; and operations to enable dispersed teams to work together to solve problems.

"Being able to display product or service information on an app can also make the sales process faster and more efficient by eliminating the need to spend time looking through computer files or brochures."



How customer engagement has changed in the social era

The sales and marketing teams in this new world also required thinking outside the conventional methods toreach out to new decision makers in the organizations. The marketing channels now require being able to utilize social presence of these decision makers for targeted marking campaigns.

Shorter sales cycles also makes it more vital to have warm introductions rather than cold calls by sales team. Sales Intelligence paired with Social Selling is increasingly becoming the most effective way for sales professionals to bring in more leads and close more deals

By finding the right connections and building trusted relationships, it will enable sales professionals to be better at sales lead generation, sales prospecting, cold calling, building and maintaining relationships.

Being able to display product or service information on an app can also make the sales process faster and more efficient by eliminating the need to spend time looking through computer files or brochures.

Speeding up this sales process enables employees to fit in more clients in their schedules, leading to more sales.

And this is only one of the many potential use cases enterprise apps can offer to support daily tasks. From sales to training, the possibilities are man □

TAPPING INTO CLOUD: THREE QUICK STEPS FOR AN ENTERPRISE TO ADAPT

We discuss the pre-requisites before migrating to a cloud solution and the three key steps before you think of restructuring your organization for the same

– Madhavan Krishnan - Senior director and practice head, Cloud Computing & Leader - Millennial Solutions Group, Virtusa

It is now an established fact that cloud adoption in Enterprises is accelerating and the momentum towards cloud adoption is astounding. Though we are still in the early stages of cloud migration, it is both exciting and scary.

Cloud enabled IT will percolate to all parts of an enterprise in some form or the other. Enabling this massive shift are some of the underlying lead indicators:

- Wide spread movement of enterprise transformation to digital,powered by mobile, social and technology delivering personalized experience to meet the ever growing demand of super empowered consumers
- Every noteworthy tech company has an offering today which supports cloud with growing share of revenue from this offering
- Wide spread adoption of methodologies like 'Design Thinking' and 'Agile Development' requiring automation, self-service and rapid deployments that support short life cycles.

Restructuring an enterprise

In my opinion, the following considerations, among others, would need to be applied when reimagining the organizational structure of an enterprise to tap into the potential of cloud.

Decentralize adoption to unleash innovation

For a product / services organization, every department or a service offering should have cloud based variant of their offering to the market, if not the only offering. For instance, marketing teams should be able to put together a quick campaign before the launch of an upcoming product release. With cloud enabled technology and tools, the number and scale of such campaigns can be put together in days which hither-to could have taken months.

An applications management division or an Infrastructure management division of an IT services company should have a cloud offering to supplement their traditional services to take advantage of emerging opportunities in the space.

Federate governance

With a decentralized cloud adoption strategy comes the increased threat of security, governance, compliance among other issues. It becomes paramount to have a mode l of standards and governance for compliance teams to establish systems and processessuch that business teams do not have a problem complying with. The current CIO / IT organizations could become the custodians and enforcers of these standards without constraining the ability of the innovators in the customer front line. For a services organization, cloud governance board could be tasked with bringing the new tech-led innovations, repeatable best practices and platform partnerships which empowers and strengthens the decentralized adoption with proper checks and balances.

Embrace automation economy

With a massive move to cloud, governance, standards, release management and execution efficiency of Digital transformation projects cannot happen without widespread proliferation of codified and repeatable best practices around automation. A learning organization's design should feed off from the operational data and fine tune the codified best practices around key business processes like release management, auto scaling, infrastructure and applications managementto name a few. The core team led by CIO's organization could be leading the innovation around automation and data-led response to business needs.

In summary, the key to winning in today's economy for an enterprise is to empower and unleash the creative power and innovation of its people to meet and exceed the expectation of clients. For this, enterprises would need an organization structure in place that is super empowering and encourages innovation without encumbrance of too many processes. Key to that is enablement of organization structure which increases the pace of innovation by having systems that encourage low cost, high volume and high value innovation, taking advantage of power of the cloud. □

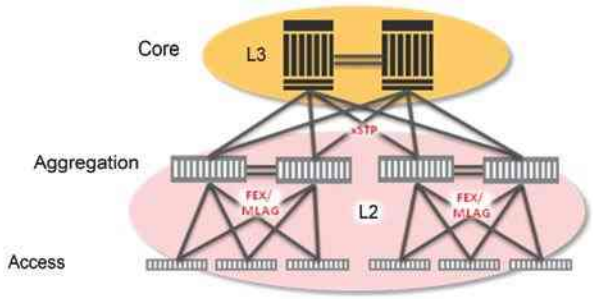
THE LATEST FAD IN DATACENTER UNDERLAY NETWORKING – LEAF AND SPINE ARCHITECTURE

With the increased focus on massive data transfers and instantaneous data travel in the network, the aging three-tier design within a data center is being replaced with what is being called the Leaf-Spine design, which is adaptable to the continuously changing needs of companies in Big Data industries with evolving data centers

– Anuj Goel, Consultant-IP & Optics Networks, Nokia

A traditional three-tiered model was designed for use in general networks, usually segmented into pods which constrained the location of devices such as virtual servers. For many years, data center networks have been built in layers that, when diagrammed, suggest a hierarchical tree. As this hierarchy runs up against limitations, a new model is taking its place.

In the hierarchical tree data center, the bottom of the tree is the access layer, where hosts connect to the network. The middle layer is the aggregation, or distribution, layer, to which the access layer is redundantly connected. The aggregation layer provides connectivity to adjacent access layer switches and data center rows, and in turn to the top of the tree, known as the core.



The hierarchical tree data center model

Anuj Goel
Consultant-IP & Optics Networks, Nokia

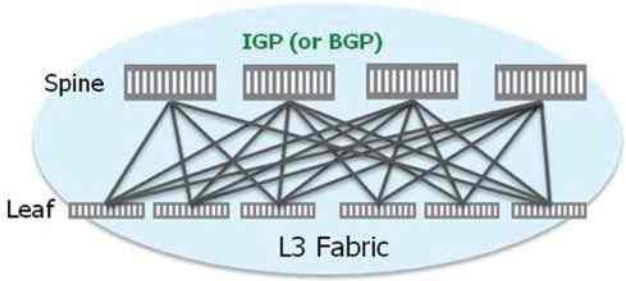
"With Leaf-Spine configurations, all devices are exactly the same number of segments away and contain a predictable and consistent amount of delay or latency for traveling information. This is possible because of the new topology design that has only two layers, the Leaf layer and Spine layer."

The core layer provides routing services to other parts of the data center, as well as to services outside of the data center such as the Internet, geographically separated data centers and other remote locations.

This model scales somewhat well, but it is subject to bottlenecks if uplinks between layers are oversubscribed. This can come from latency incurred as traffic flows through each layer and from blocking of redundant links (assuming the use of the spanning tree protocol, STP). Another issue is Inter-subnet traffic tromboning to Core node (while overwhelming majority of traffic is E-W traffic).

The Leaf-Spine Architecture

With Leaf-Spine configurations, all devices are exactly the same number of segments away and contain a predictable and consistent amount of delay or latency for traveling information. This is possible because of the new topology design that has only two layers, the Leaf layer and Spine layer. The Leaf layer consists of access switches that connect to devices like servers, firewalls, load balancers, and edge routers. The Spine layer (made up of switches that perform routing) is the backbone of the network, where every Leaf switch is interconnected with each and every Spine switch.



The Leaf-Spine Model

To allow for the predictable distance between devices in this two-layered design, dynamic Layer 3 routing is used to interconnect the layers. Dynamic routing allows the best path to be determined and

adjusted based on responses to network change. This type of network is for data center architectures with a focus on "East-West" network traffic. "East-West" traffic contains data designed to travel inside the data center itself and not outside to a different site or network. This new approach is a solution to the intrinsic limitations of Spanning Tree with the ability to utilize other networking protocols and methodologies to achieve a dynamic network.

Advantages of Leaf-Spine Architecture

With Leaf-Spine, the network uses Layer 3 routing. All routes are configured in an active state through the use of Equal-Cost Multipathing (ECMP). This allows all connections to be utilized at the same time while still remaining stable and avoiding loops within the network. With traditional Layer 2 switching protocols like Spanning Tree on three-tiered networks, it must be configured on all devices correctly and all of the assumptions that Spanning Tree Protocol (STP) relies on must be taken into account (one of the easy mistakes to make when configuring STP is with mislabeling device priorities which could lead to an inefficient path setup). The removal of STP between the Access and Aggregation layers in lieu of Layer 3 routing results in a much more stable environment.

Another advantage is the ease of adding additional hardware and capacity. When oversubscription of links occurs (meaning that more traffic is generated than can be aggregated onto the active link at one time), the ability to expand capacity is straightforward. An additional Spine switch may be added and uplinks may be extended to every Leaf switch, resulting in the addition of interlayer bandwidth and reduction of the oversubscription. When device port capacity becomes an issue, a new Leaf switch can be added by connecting it to every spine and adding the network configuration to the switch. The ease of expansion optimizes the IT department's process of scaling the network without managing or disrupting the Layer 2 switching protocols.

Use Cases for Leaf-Spine Architecture

Web scale applications where server location within the network is static would benefit from the implementation of Leaf-Spine. The use of Layer 3 routing between layers of the architecture does not hinder web scale applications because they do not require server mobility. The removal of Spanning Tree Protocol (STP) results in a more stable and reliable network performance of East-West traffic flows. Scalability of the architecture is also improved.

Enterprise applications leveraging mobile virtual machines (e.g. vMotion) create an issue when a server needs to be supportable anywhere within the data center. The use of Layer-3 routing and lack of VLANs extending between Leafs breaks this requirement. To work around this issue, a solution such as Software Defined Networking (SDN) can be employed, which creates a virtual Layer 2 or Overlay tunnels above/on top of the Leaf-Spine network. This allows servers to move around within the environment with impunity at no detriment to "East-West" performance, scalability, and stability attributes of a Leaf-Spine network topology.

Other Considerations – BGP as Control Plane Protocol

Routing in the traditional DCs was done by IGPs (OSPF/ ISIS/ EIGRP). But, for large-scale DCs there is a lot more complexity to consider. When creating an IP Fabric there are a few services that we need: prefix distribution, prefix filtering, traffic engineering, traffic tagging, and multi-vendor stability. Creating an IP Fabric is an incremental process; not many people build out the entire network to the maximum scale from day one. It's critical that the IP Fabric architecture not change over time and the protocols used are stable across a set of different vendors.

What is interesting is that BGP pulls ahead as the best protocol choice in creating an IP Fabric. It excels in prefix filtering, traffic engineering, and traffic tagging. BGP was intended for large-scale networks and has number of advantages over IGPs like OSPF and ISIS:

- Failure propagation has a limited scope => More stable network
- Troubleshooting: Path shows precisely where prefix originated and how it was propagated
- Traffic Engineering through path attributes manipulation

Conclusion

Leaf-Spine networks offer many unique benefits over the traditional 3-tier model. The use of BGP for Layer 3 routing with Equal Cost Multipathing (ECMP) improves the stability and total available bandwidth by utilizing all available uplinks. With easily adaptable configurations and design, Leaf-Spine has improved the IT department's management of oversubscription and scalability. Eliminating the Spanning Tree Protocol (STP) has led to drastically improved network stability. Utilizing new tools and the ability to overcome inherent limitations with other solutions such as SDN, Leaf-Spine environments allow IT departments and data centers to thrive while accomplishing all needs and wants of the business. □

HYBRID CLOUD - A NEW CONTENT DIVIDE EMERGES

With a hybrid cloud environment, organizations look to manage the sensitive and highly regulated information within the controlled environment of a private cloud, while willingly storing the transactional, non-critical content in a shared hosting facility

– Virender Jeet Sr. Vice President, Newgen Software

Cloud adoption has evolved immensely over the last few years, as organizations begin to realize its true potential. It has led to unprecedented growth across industries by fostering a collaborative ecosystem and a gamut of innovative business services. Once considered as a cost effective platform to support the new business initiatives, Cloud has moved to the centre stage now. It is the lynchpin around which many of the strategic decisions about the core IT infrastructure are taken.

It is this shift that is making business leaders rethink their cloud strategy. The goal is to fully leverage the on-demand, self-service, elasticity and cost efficiency attributes of cloud while maintaining a secure, reliable and high performance framework. This leaves them with a tough choice between a private and public cloud environment.

Virender Jeet
Sr. Vice President,
Newgen Software

"While specific aspects of the existing infrastructure (such as storage and compute) can occur in the private cloud, the remainder (such as analytical processing of data) can be moved to the public cloud. This will ensure that organizations are in complete control of its business sensitive information while taking full advantage of the advancements in data analytics."

A private cloud renders a proprietary and highly customized data storage and management architecture that allows organizations to score high on information security, confidentiality as well as regulatory compliance. However, it carries the same staffing, management, maintenance and capital expenses issues that are common to the traditional, on premise data centres. Additionally, private cloud expenses include spends on virtualization, cloud software and cloud management tools.

On the other hand, a public cloud delivers the much needed scalability, flexibility and cost advantage along with the ability to change computing resources on-demand and provision multiple machines for complex computing jobs such as the big data analytics. Customized tools track computing usage and business units pay only for the resources they use. However, these shared computing environments aren't suitable for all businesses, such as those with mission-critical workloads, security concerns, uptime requirements or management demands.

Hybrid Cloud Computing has helped organizations address the security concerns of cloud platform without compromising on its business benefits. It ensures a diversified IT environment where both public/offsite and private/onsite cloud resources can be deployed depending on the business needs. A perfect example of a Hybrid Cloud environment can be seen in cases where an application runs in a private cloud or data centre and bursts into a public cloud when the demand for computing capacity spikes - a capability called cloud bursting.

A New Content Divide Emerges

It is therefore clear that any enterprise would do well to inculcate both public and private features in its cloud strategy. This journey to the hybrid cloud would however depend on the nature of the business, the industry, the competition and other market forces, changing consumer attitudes and demographics, the legal and regulatory environment as well as the overall business strategy and future roadmap.

But what it definitely entails is the emergence of a new content divide within an enterprise. With a hybrid cloud environment, organizations will look to manage the sensitive and highly regulated information within the controlled environment of a private cloud, while willingly storing the transactional, non-critical content in a shared hosting facility.

Broadly speaking, private cloud will be deployed to create and manage the most confidential data and information of an organization, be it for any process or department. On the other hand, public cloud will be used for the more voluminous, mundane and working levels of data and information management where the real advantage lies in seamless accessibility and faster processing.

Also, there will be a change in the data management strategy of an enterprise. While specific aspects of the existing infrastructure (such as storage and compute) can occur in the private cloud, the remainder (such as analytical processing of data) can be moved to the public cloud. This will ensure that organizations are in complete control of its business sensitive information while taking full advantage of the advancements in data analytics.

Building the Right Strategy

It is important to understand the strengths as well as the limitations of your cloud system, more specifically the interoperability and integration aspects. Your existing IT infrastructure and systems stand to influence your decision a lot. You have to ensure that the legacy systems such as ERPs, CRMs, Data Warehouses, Data Centres and the automation systems such as BPM, ECM, Social, Mobile and E-mail plug-ins integrate and interact synchronously with the hybrid cloud set-up.

As the hybrid cloud emerges as a full-fledged IT strategy, a trusted vendor support, consultation, as well as the ability to anticipate the near future development pertaining to your business and industry would go a long way in determining the efficacy of your hybrid cloud. □

"CLOUD IS NOT A MAGIC BUTTON"

Hybrid Cloud can be as easily the worst of both worlds as it can be the best of both worlds. What is that fine line between Hybrid and Sandwiched Clouds, John Yung, CEO Appcara, unravels

– Pratima Harigunani, CIOL

Cloudbusters may not be as popcorn-friendly as ghostbusters but they do have a lot going for them – public cloud issues like bad neighbourhood, pricing flux, outage-pinned domino effect, networking underbelly etc and at the same time private cloud question marks around cheap hardware, management layers, and application segregation.

John Yung, Appcara's CEO, thumbs through this interesting plot that is building up between the two lands called public cloud and private cloud. What makes hybrid cloud tick? He answers on many levels.

Hybrid Cloud is coming up on the radar again and more strongly this time. How do you defend that proposition?

Currently, 82 per cent of enterprises have a hybrid cloud strategy, up from 74 per cent in 2014.While adoption of the hybrid cloud continues to grow, enterprises are still slow in adopting a cloud security infrastructure to fit their specific hybrid cloud needs. What we do at our organization is more than connecting to the cloud by making applications easily portable across the cloud, and that's been a missing thing. Most enterprises have some sort of cloud solution but the level of sophistication that is needed in terms of production-ready answers is still a basic issue. When you have a hybrid cloud, interoperability is very important. One control panel has to give visibility into two different entities and if it cannot give that for two environments, it is not truly hybrid. Integration, portability and visibility are real attributes of a hybrid cloud. Not many enterprises and products have been able to achieve those aims.

Why?

It is both a technology and product issue. Why would a private cloud vendor give incentives to connect to AWS and vice versa. It is both about the technology and the model. Due to differences in base virtualization, interoperability becomes unwieldy.

Even with CloudStack, OpenStack etc around?
Yes, that's the problem we are trying to solve. Typically, Cloud Service Providers (CSPs) started five to six years back and enterprises started looking at open models for lower costs and multiple environments, We are trying to bring control panels cloud connectors and single UI.

Can you tell how it works under the hood, given the multiple breeds at work?
It is possible through APIs. Our secret sauce is a generic work flow engine that allows us to hide all the complexity and keep things simple for the enterprise. We have been looking at a good footprint and some of our customers include One Asia, British Telecom, HP Cloud Serviews and Global Cloud Exchange.

Now that most companies have started to come out with management layers over the cloud core, would that concern you in a competitive sense?
Yes some major vendors have started offering services. Like VMware. But it eventually benefits us when vendors compete with one another. The more mixed environments come up, the more we have a chance at simplifying things. Customers like BT show the way we have expanded our footprint well. We enable SPs to offer services to their customers. We offer control panel and manage multiple environments and sometimes we also enable networking.

Talking of that, would you say that companies like Verizon or BT have an edge in the end-to-end cloud play due to their strong networking lineage?
Yes, networking is a big element in a cloud model. Some enterprises have their own legacy environments (like 80 per cent or so) and they know well that they need to migrate to a cloud world. Now there may be applications with dependencies on one another and that's what makes the cloud game super complex. That can make a networking major's cloud proposition strong by giving room for point-to-point connections throughout applications and back-end. We too have seen some telecom majors using their networking part to the edge here.

Thinking of Cloud, one tends to worry about outages. How does one address the fear of a domino effect on applications if one part of a cloud environment suffers something?
That is not likely as the control panel integrates visibility and not the data path. Applications keep running in their own SaaS environments.

What about enterprises that are tinkering with cheap hardware and private clouds of a new making?
For some large users that can make sense but for most enterprises it makes more sense to mix bare metal with cloud. There may be some applications where a virtualized environment will not be apt. Mixed metal can be a good option.

Any challenges that have surfaced?
With the rise of hybrid IT, security professionals have identified new challenges, including a greater number of network-connected devices (66 per cent), more network traffic (56 per cent), and new application implementations (51 per cent).

To conclude – what's happening with the Cloud movement in general?
CIOs in the last 18 months have become more practical here and they have come to realize that cloud is not a magic button. I would suggest them to take the cloud move slowly and at the pace which their skills and resources allow. □

'ZONE DEFENSE' STRATEGY FOR SECURING IT INFRASTRUCTURE

IT departments have started investing more towards securing their infrastructure, but are those efforts enough? We find out

– Murli Mohan, Director & General Manager, Dell Software Group

In today's technology driven space, where a company's success lies in how secure its IT infrastructure is, it becomes even more important for organisations to re-look their security requirements. No doubt IT departments have started investing more towards securing their infrastructure, but are those efforts enough? Security plays a vital role throughout the optimizing process of bringing an IT infrastructure from a vulnerable state to a stable state.

We frequently come across reports about breaches and sometimes companies don't even acknowledge the fact that they have faced a security breach. According to Dell's most recent Annual Threat Report, they found an increased flow in point-of-sale (POS) malware, increased malware traffic within encrypted (https) web protocols, as well as twice the number of attacks on supervisory control and data acquisition (SCADA) systems.

The state of security in Indian organisations

Have hackers become more advanced or are the organizations less protected than they were earlier, in spite of making increased investments?

Certainly, such views are true. In fact, based on select findings, there is a connection that links raising kids, Hockey and the way organisations should think about security.

Parents move from one strategy to another with kids. For instance, when they handle a single child, parents can play man-to-man defense, similar to the way Hockey is strategized, where a player guards alongside a particular opponent. In the parental language, while one parent is occupied, the other can localise the damage the little angel can inflict on a single room.

Murli Mohan
Director & General Manager,
Dell Software Group

In another scenario, when parents have two or more kids they move to a zone defense, where each defensive player is assigned an area on the field. Thus, when an attacker enters their range, they are responsible for covering the person. In this formation, parents let the troublesome kids loose around the house and simply try to protect the valuables and fragile wares in the dining or living room.

Similar to the above scenario, currently organisations are trying hard to protect each and every part of the infrastructure, using the man-to-man approach. Honestly, the zone defense would drive better results, as part of the playbook that keeps getting updated frequently. Here is how you can work on this approach:

1. Evaluate what requires proper protection? There is no doubt organisations can walk away from boundary defenses like next-gen firewalls or encryption technologies, so invest in them. Nevertheless, focus on security must not be limited to that, as a part of it can be allocated somewhere else. Be clear about IT assets, critical apps, and data that you would want to absolutely protect as everything does not need the same security focus.
2. Security attacks are always about 'When' and not just 'If'. So an organisation's safest option is to have controlled access through limited exposure. Hackers are not only getting smarter but are in continuous chase of credentials, preferably evaluate and have a tight control on what each and every credential (user id) has access to. Shared admin accounts are one of the most vulnerable spot for a cyber-attack, so make sure you when an employee exits the organisation, you just remove them completely. Once they change jobs, transfer their access to match their new job and eliminate the access from their preceding role. This is the ZONE in ZONE defense. In short – isolate access to only what the user/credential needs.

When these two models are taken into consideration together, it's called Zone Defense approach. This will offer additional security to an organisation's infrastructure assets, given the financial restraints that organisations constantly face. To sum up "protect your valuables today to reap benefits in future". □

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HOW FACE AND VOICE RECOGNITION TECHNOLOGY CAN TRANSFORM PDS IN RURAL INDIA

A smart use of the advanced technology can resolve many problems and challenges associated with the distribution of subsidised fertilisers. We discuss how

– Tarun Wig, Co Founder, Innefu Labs

Andrew Carnegie, the Iron man of the American steel industry once said, "I resolved to stop accumulating and begin the infinitely more serious and difficult task of wise distribution." If we read this quote seriously, then it perfectly defines the challenges India faces in its Public Distribution System (PDS), especially in the remote areas of the country where a majority is the victim of poverty, illiteracy and injustice. Poor farmers in the rural India are still deprived of the agricultural subsidies, whereas a few rich and shrewd farmers are unfairly availing these subsidies due to various loopholes in the distribution mechanism.

Agricultural subsidies that are meant to encourage productivity and reduce disparity have been criticised outrageously because these lack in fair and uniform distribution. Fertiliser is the main item which is beyond the approach of needy farmers because there are people who procure it in abundance using various fake identities and then sell it at higher prices in the parallel market. Although the government is keen on curbing the illegal distribution of fertiliser, but the technology in use is not effective enough to evaluate that whether the subsidy is going in the right hands or not. It is believed that about one-third of the subsidy is availed by the fake customers using fake identity proofs. Recent study highlights that lack of monitoring in the fertiliser subsidy is causing an adverse impact on the overall agricultural productivity and the financial condition of small and marginal farmers is deteriorating day by day.

Tarun Wig
Co Founder, Innefu Labs

"The multifactor authentication is an as easy to use a cost-effective biometrics mechanism based on image recognition. Before giving the stipulated amount of fertiliser to an individual farmer at the subsidised price, the public servant will click the photo of the farmer and verify it with the picture stored in the database."

At one end, public authorities are willing to ensure substantial and timely availability of fertilisers to the poor farmers, but, on the other end there is a great dearth of authentic data, advanced technology and the availability of trained employees to assess and control the distribution of fertiliser in the rural areas of world's largest democracy.

How technology can stop pilferage

Smart use of the advanced technology can resolve many problems and challenges associated with the distribution of subsidised fertiliser. Till date, the Government has not adopted any foolproof authentication process to fix the problems under the Public Distribution System. But, it doesn't mean that there is no solution for such problems, in fact, IT has revolutionised the security and validation process around the globe and with the advent of the latest facial recognition technology customer's authentication is no more a terrible task. Facial Biometrics using a standard smartphone combines with a unique risk transaction algorithm and integrates with user needs. This unbreakable architecture works on mobile signals and its success rate is up to 95 per cent.

The multifactor authentication is an as easy to use cost-effective biometrics mechanism based on image recognition. Before giving the stipulated amount of fertiliser to an individual farmer at the subsidised price, the public servant will click the photo of the farmer and verify it with the picture stored in the database. The data can be transferred to a central database through a network connection. Facial Biometrics can be carried out with Aadhar database to ensure that there is no leakage in the system.

Right now, the installation of necessary hardware and software cost in between 10,000-15,000 INR per fair price shop, though this cost is likely to come down as the volume increases. It would make the entire process much more transparent on account of regular flow of information. Moreover, what it will certainly do is to empower the beneficiaries who really deserve agricultural subsidies and side by side, the face biometrics technology will help to paralyse the activities of black marketers who are illegally availing the subsidies in the garb of genuine farmers. □

BIG DATA: A STRATEGIC LEVER TO DRIVE GROWTH

Organizations today perceive big data to be critical for a wide spectrum of strategic corporate goals, from new revenue generation and new market development to enhancing the customer experience and improving enterprise-wide performance

– Sidharth Shekhar

There is no doubt that big data analytics will play a major role in the whole digital disruption that is happening in India today. Organizations have understood the importance of big data analytics and what it can do for their business. They are now using big data analytics as a strategic lever to help drive top line growth, optimize costs and mitigate risks. We spoke to Arnab Chakraborty, Managing Director, Advanced Analytics, Accenture Digital on the rising influence of big data and its future.

Big data can heavily influence organizations' performance

Organizations today perceive big data to be critical for a wide spectrum of strategic corporate goals, from new revenue generation and new market development to enhancing the customer experience and improving enterprise-wide performance. However, this has led to a war for talent. In fact, one of our surveys highlights that in India, 53 per cent of companies noted a lack of talent to implement big data with 43 per cent noting the need for talent to run big data and analytics on an the rest of the world, ongoing basis. To tackle this problem of talent scarcity, we recommend companies focus on building skills. They should hire external resources, staffing up when possible, developing internal skills through training and development.

Find and analyze the relevant data

In today's hypercompetitive business environment, companies not only have to find and analyze the relevant data they need, they must find it quickly. The challenge is going through the sheer volumes of data and accessing the level of detail needed, all at a high speed. Big Data infrastructure is getting faster & faster. In-memory solutions will address lightning-fast data processing & equally fast data storage and updates.

Finding the right talent is an issue

Talent challenges are likely to be a concern for companies. Indian companies think big data is transformational and will revolutionize their business in the same way Internet did. Even early practitioners see competitive advantage in big data and are rapidly moving to disrupt their own data practices.

Hybrid cloud model to get a boost

We see hybrid technology structure becoming a force multiplier this year. We also saw organizations increasingly adopting open source technology for analytics in combination with classical technologies in 2015 and we expect more companies to follow suit. This hybrid mechanism gives companies an option to adopt newer technologies while keeping some of the legacy systems within the organization, said Chakraborty.

IoT and Big data share symbiotic relationship

The Internet of Things (IoT) has a major influence on the Big Data landscape. IoT is definitely an exciting prospect from the Big Data perspective but we need to quickly improve our whole setup to handle the impact of IoT on the Big Data landscape. There are a few areas of concern and security and privacy and data collection efficiency are probably the most pressing problems we are facing. Security compromise and inefficiencies in data collection mechanisms result in a loss of reputation, time, effort and money.

Big data and the end-consumers

The use of Big Data is helping leading companies to outperform their peers. In most industries, established competitors and new entrants alike will leverage data-driven strategies to innovate, compete, and capture value.

Big Data delivers significant benefits for end-consumers. Some of the benefits include improved customer experience as Big data enables data crunching of varied data sources like device data, network data, customer feedback data, and social media data in real time/near real time and help improve customer experience. □

HANDLE YOUR FINANCES SMOOTHLY WITH THESE TOP FIVE APPS

Whether you want to pay taxes, balance your monthly budget or plan your investments, these apps can come in pretty handy for managing all your finances

- Sidharth Shekhar

Often, people don't keep a track of their expenses with less focus on savings, investments and emergencies. It's always better to list all the recurrent expenses, bills, debts, and taxes which, can only be tracked if you have a budget.

In the age of apps, all this is like a breeze if you know your needs as there are many types of finance management apps available in the app stores.

From paying your tax, balancing our monthly budget to investment planning such apps are a must have for everyone. Let's take a look at some of the best finance management apps available in the market.

MoneyView

Money View app gives a clear detailed picture of a user spending pattern by picking up all the financial messages from banks which is received on a mobile phone. It then presents an accurate picture of the financials. Security wise, the app claims that it does not collects or reads the passwords and personal SMSes. Also, no bank account ids and passwords are requested by the app.

If you receive SMS alerts for pending bills then that also shows in the Bills Due section. Trends shows your daily, weekly or monthly spending and cash management keeps a track on all your ATM withdrawals.

Smart alert feature reminds the users when a bill is due and also allows bill payments through the app. Expect this app's buzzer to go off whenever you get close to exhausting your monthly budgets.

In the wake of recent malwares attacks through apps privacy is a growing concern for users. Money View deploys bank level encryption to ensure that user's data is never compromised.

Money View is only available on Android right now.

MyUniverse

MyUniverse tracks your income, expenses, and investments, and it can integrate data from different banks as well.

While the basic app is free it can only manage two accounts. If you need more features then you have to cough up Rs. 599 (monthly fee) which allows unlimited accounts. Another good feature is ZipSIP which lets you to invest in a portfolio of mutual funds created by experts based on your risk profile in few clicks.

However, one major security concern is that the app stores your bank credentials like the username and password.

You can set up automatic payments for your bills such as credit card bills. You can also buy stocks and mutual funds directly and it tracks your account, income and portfolio. As the app is connected to the bank, you don't need to enter any data manually.

MyUniverse is available on Android and iOS.

Wally+

Wally+ tracks your expenses and uses your location to automatically identify and categorize the venue. It can also scan expense receipts and the smart notifications feature updates you every time you reach your savings goal.

Wally+ is available on Android and iOS.

Mvelopes

Mvelopes is another app which manages spending accordingly. You can quickly and easily create an online budget, track all your spending, and exactly how much more you can spend.

It categorizes your monthly budget by putting those amounts into envelopes. The free version allows 25 categories of envelopes and also syncs up with four accounts along with tracking online transactions.

Mvelopes is available on Android and iOS.

iExpense Diary

iExpense Diary allows you to add expenses category wise, choosing payment type such as credit card, cash and debit card.

To manage your finance it prepares a pie chart that helps you in tracking the category where you are spending maximum in a week or month. Based on the pie chart, you can easily re-evaluate your daily expenses. This app records the transaction category wise which makes it easy to track expenses. You can also export your statistical and graphical report to PDF and email it to yourself by In-App purchase.

iExpense Diary is available on Android and iOS.

With these apps, you can control your entire finances. □

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SMES MUST THINK BEYOND TRADITIONAL MARKETING PRACTICES TO SUCCEED

In an exclusive interaction with us, Harshavardhan Neotia, President-FICCI and Chairman-West Bengal Ambuja Neotia Group, talks about challenges faced by SMEs, how they must go beyond traditional marketing practices to grow their business, and what FICCI is doing to empower them

- Nijhum Rudra

The micro, small and medium businesses face problems of non-availability of adequate and timely credit at cost effective rates, technological obsolescence, marketing constraints, non-availability of skilled human resources, infrastructural bottlenecks, high input costs and a host of rules and regulations.

Besides the above, the issue of delayed payment is a big concern that affects the MSME the most. MSMEs supply lots of materials to Defence, Railways, Space research, PSUs, state and Central govt. establishments, whereas payment from these organisations gets delayed over 180 days, despite having an MSMED Act in force, where payment should be made within 45 days. Government should work in this regard for the enforcement of law.

"We have proposed to the government that an agency could be set up or facilitation councils could be used, which will specifically work towards resolving the issue of delayed payments. All MSMEs should be mandated to provide a list of receivables after 45 days to this agency along with documented proofs," says Neotia.

"This agency should have the power to take strict action against the defaulters, like legal action or have the right to withdraw tax or duty rebates/ incentives from the defaulters," he added.

Harshavardhan Neotia
President, FICCI

"The Internet offers significant opportunities for India's booming SME sector and the Indian economy....with fewer than 5% of businesses having web presence... India is poised for big gains as remaining 95% of businesses come online. "

Breaking the Struggle Chain

FICCI has undertaken deep research over the years to understand issues that have constrained the MSME sector. FICCI has been servicing the MSME sector for decades and reaffirming its commitment to promote MSMEs growth FICCI has established "The Confederation of Micro, Small & Medium Enterprises" (CMSME) in December 2013. FICCI-CMSME endeavors to provide one-stop organization that will work closely with the MSME sector. For FICCI- CMSME, therefore, the mission is to develop MSME capabilities to meet the challenge of their business operations.

"The CMSME has tied up with several partners who are supporting us towards our ambition of empowering MSMEs," remarks Neotia. In order to make organized finance facility available to our members across the country at competitive interest rates, FICCI-CMSME signed a MoU with IDBI Bank Ltd. This partnership with IDBI Bank Ltd offers concession of 100 bps on interest rates and IDBI will charge only 0.10 per cent processing fee from FICCI-CMSME members.

Insurance is an extremely important component of the MSME's business. FICCI-CMSME addresses this issue by providing members with Cost-effective and Useful MSME Insurance services and guidance. CMSME also provides digital marketing services to its members.

Assistance from the Government-The Ministry of MSME

There have been numerous efforts, schemes and policies rolled out by the Ministry of MSME (MoMSME) to provide support to the MSME segment in the area of credit and finance, technology upgradation, marketing, quality, design, and many more. The recent schemes launched by the MoMSME are MUDRA, ASPIRE, revamped SFURTI scheme, employment exchange for industries & the most important is the easing of registration process by launching an online registration facility i.e. Udyog Aadhaar.

There are several policies for MSMEs but as of now there is no comprehensive policy for the sector. FICCI

understand that the MoMSME is already working towards bringing out one comprehensive policy for MSMEs.

FICCI expects to work towards strengthening policy consultations with the Government and address plethora of concerns faced by MSMEs. A conducive business environment for MSMEs is the key expectation from the Government. Towards this direction, FICCI has submitted to the Government an "Ease of doing business for MSMEs" document in May 2015.

Role of IT

According to the findings of a survey conducted by FICCI, the use of ICT tools for an effective integration of the supply chain SMEs is not sufficient. As many as 88 per cent respondents do not use ERP in their business. In spite of 58 per cent people being aware about ERP, only 12 per cent actually use it in their business. Majority of the people know about ERP but still do not use it.

Also, FICCI-Nathan study on "Unleashing the Potential: Internet's Role in the Performance of India's Small and Medium Enterprises" revealed significant opportunities both for India's booming SME sector, where fewer than 5 per cent of all businesses even maintain a web presence, and for India's economy: small medium enterprises are critical to the economic growth in India. According to the report, only 51 per cent of online SMBs use the web to advertise a mere 27 per cent use it for e-commerce. But with 95 per cent of businesses yet to even establish a website; India is poised for big gains as more small enterprises come online.

Challenges in Implementing IT

Some of the reasons cited by MSMEs for not using IT are that implementation of the same requires technical expertise which MSMEs generally lacks and if we talk about ERP then it is very expensive. Substitutes such as Tally, MS Access and MS Office are available which serve their purpose to a large extent. Further, many SMEs do not have business operations large enough which requires the need of sophisticated software or ICT tools like ERP.

Government should introduce MSMEs to new Technologies like Cloud Computing, Telecom Connectivity, etc at cost effective rates.

As a part of membership services, FICCI-CMSME helps create effective brand and facilitate members to establish their own identity via a website at very minimal cost, because the protection of online reputation assumes special significance to increase brand value and revenue/leads. CMSME also provides digital marketing services to its members.

In 2013, FICCI jointly with Google India organized the first ever 'India SME Heroes Challenge' an award that recognizes SMEs who have used the Internet to grow and expand their businesses in innovative ways to celebrate small enterprises who have already gone online in India.

In 2014, FICCI jointly with Amazon.in, organized a special session with Jeff Bezos, Founder CEO, Amazon.com where he engaged in an interactive dialogue on 'Creating an enabling environment for SMEs in the digital economy'.

Workshops like 'Adding muscle to your Business' by FICCI-CMSME are aimed to deliver simple methods to strengthen their businesses.

Future Roadmap for Indian SMEs

Indian MSMEs offer greater value to their partners so as to improve the overall competitiveness of the value chains. Also, it is equally important for MSMEs to understand and adhere to the international standards and norms for becoming a preferred supplier in the domestic as well as global value chain.

To support this idea, the need of the hour is not only to depend upon the schemes and policies of the government but also to develop and strengthen ourselves with new innovative ideas that could attract support and assistance in the fields of strong market research, innovative production processes, efficient supply chains, speedy financing solutions etc.

Also, in order to succeed in an ever-dynamic economic and business environment, MSMEs have to think beyond traditional marketing practices and adopt new age tools to promote their products and services. Website, search engine optimisation (SEO), social media, blogging and e-commerce tools, for instance, have emerged as channels that businesses cannot ignore.

MSME sector has shown promising as well as excellent growth trends surpassing the industry sector over the last couple of years. Projections indicate that an enabling ecosystem will help the sector consolidate its position in the global value chain (GVC) and MSMEs could play a crucial role in enhancing India's global market share.

"It is well known that the MSME sector is the growth engine of our economy given its scale of operations not only in India but worldwide as well. The MSME sector constitutes over 90 per cent of the overall industries and hence is bound to contribute in a major way in the growth of the economy," Neotia concluded. □

HELPING BIGCHEMIST WITH OPEN APIS TO INTEGRATE ORDER FLOW FROM PUBLIC CLOUD

A mid-size online pharmacy solution company, BigChemist, gained operational and financial efficiency with help of ePaisa's cloud based open APIs solution, which also helped to diminish the overall cost

- Nijhum Rudra

BigChemist, an online health product and services company was established in May 2013 with a unique vision of offering trouble-free, effectual and holistic medical solutions and services to people.

Business Challenges

The company was facing severe technology hurdles like lack of ahvailability of real time inventory across their website and mobile app. They also needed applicability of the schemes and promotions specific to the local geography, with a system to accept all modes of payments like wallets, cards, and net banking, with split payment option. "We must have the ability to provide real time inventory aging, top selling items, batch number details and reservations for the orders confirmed," said Puneet Kapoor, Director, BigChemist.

They needed an integrated solution for inventory and financial accounting with multiple methods of accepting payments, running multiple schemes and discounts. The solution also needed to be open to integrate public and private cloud using APIs for two-way flow of data both real-time and batch process.

Implementation of the Solution

After evaluating multiple business solutions, BigChemist identified ePaisa to manage their point-of-sale inventory and billing. "The solution provides us with open APIs to integrate the order flow from the public cloud in AWS for customer orders to the ePaisa private cloud hosted on an Android based integrated hardware at different fulfillment locations," added Kapoor.

The solution also accepts all payment methods from online gateway, wallets, smart and swipe cards as-well as payment-on-delivery modes. The solution can be configured centrally for the item list, pricing, item tracking details, schemes and discounts. The configuration can be specific to a location and can be customized as needed to run local and global promotions. This provides insights into entire ecosystem wide inventory availability, movement, sales, demand and purchase supply requirements.

The Result

The solution can also be used offline in-case the network is unavailable or systems are down due to a power cut. Once the services resume it automatically syncs all data in the private cloud both ways. The solution thus works as hybrid for cloud and local hardware providing further stability and flexibility for keeping the transactions going.

The solution also offers the option to click images of the prescription for the walk-in customers and attaches them to their Invoice on the go. This can then be synced to the central cloud for record keeping. This is a very important and critical factor as it helps the company conform to regulatory requirements.

Overall the solution provides both operational and financial efficiency, reduces the overhead costs, upfront capital cost and has hugely impacted the bottom line of the business in a cut throat competitive environment. □

100+ FREE AND OPEN SOURCE SOFTWARE TO ENHANCE PRODUCTIVITY AND REDUCE COSTS

Use these popular free and open source software to automate virtually every nook and corner of your business and without burning a big hole in your IT budgets

- Adeesh Sharma

It is a complete myth that each organisation out there could practically think of running its entire enterprise network using free and open source software. Yes, they probably could but only if they employ geeks within their IT team or if they are working on developing some open source application. So, let's look at free and open source software from a realistic angle and based on ground reality. Yes, people are enthusiastic about saving software costs but they probably are more comfortable and feel more secure in using free software in parts rather than adopt a wholesome approach. So, this story more or less borders on offering practical advice about the free tools available that could help you in reducing costs within the various segments of your business processes.

For organisations keen on manage their cloud infrastructure, we discuss 10 tools for Cloud Infrastructure and Management that help you build, manage and monitor networks of virtual machines, private or hybrid clouds, tweak and track cloud services and much more.

From project tracking to email scheduling to office productivity suites, we discuss the popular productivity tools that you can install to satiate your needs. These software allow users to assign tasks to people, set milestones, schedule events on a calendar, use discussion boards, and track time spent on tasks. You can fire up online meetings, host webinars, and share your screen. This includes Skype integration, conference lines, and one click recording and sharing. The in-built analytics lets you know how your users interact with your content at the meeting.

Using free mobile CRMs, you can navigate the entire ERP and CRM system, modify your views, check inventory availability at multiple locations and create new sales orders. You can also deploy them on the cloud, on-premise, or with a hybrid combination.

The social media marketing tools are designed to manage social networks, by providing the means for a user to schedule posts to Twitter, Facebook and LinkedIn. Their best feature is 'scheduling' which allows you to pre-post content to go out at specific times of the day whether you're around or not.

Building an ecommerce platform for businesses has become easier over the years anda merchant can also develop his own eCommerce platform by using Open-source solutions. Open source not only minimizes the cost of building your eCommerce portal but also offers customizability, scalability, and communities of developers to assist new merchants. □

NINE FREE TOOLS TO MANAGE SOCIAL MEDIA FOR YOUR BUSINESS

Social media is one of the most effective ways for businesses to get more traffic and generate new leads. We present the ten popular free tools that let you manage it

- Sonam Yadav

1. Hootsuite

It is the most popular social media management tool for people and businesses to execute campaigns across multiple social networks like Facebook and Twitter from one web-based dashboard. Hootsuite has become an essential tool for managing social media, tracking conversations and measuring campaign results via the web or mobile devices.

2. Buffer

Buffer is a smart and easy way to schedule content across social media. It helps you to keep a consistent social media schedule all week long without worrying about micro-managing the delivery times.

3. SocialOomph

It is a neat web tool that provides a host of free and paid productivity enhancements for social media. It has some useful Twitter features like scheduling tweets, tracking keywords, viewing mentions and retweets, DM inbox cleanup, auto-follow and auto-DM features for new followers.

4. TweetDeck

Tweetdeck is a web and desktop solution to monitor and manage your Twitter feeds with powerful filters to focus on what matters. Tweetdeck is available for Chrome browsers, as well as Windows and Mac desktops. You can also schedule tweets and stay up to date with notification alerts for new tweets.

5. SocialFlow

Social Flow is an interesting business solution to watch real-time conversation on social media in order to predict the best times for publishing content to capture peak attention from target audiences. SocialFlow conducts an analysis of social signals to help identify where marketers should spend money on Promoted Tweets, Promoted Posts and Sponsored Stories, extending the reach and engagement for Twitter and Facebook paid strategies.

6. SproutSocial

Sproutsocial is a powerful management and engagement platform for social business. It offers a single stream inbox designed to help you never miss a message, and tools to seamlessly post, collaborate and schedule messages to Twitter, Facebook and LinkedIn. The platform also has monitoring tools and rich analytics to help you visualize important metrics.

7. SocialBro

SocialBro helps you provide tools to browse your community and identify key influencers, determine when the best time to tweet is, track engagement and analyze your competitors. Socialbro analyzes the timelines of your followers to generate a report showing you when the optimal time to tweet is that would reach the maximum amount of followers for more retweets and replies.

8. CrowdBooster

Crowdbooster offers a set of no-nonsense social media analytics with suggestions and resources to boost your online engagement. The platform provides at-a-glance analytics, recommendations for engagement and timing, audience insights and content scheduling to optimize delivery.

9. DashBurst

It is a new multimedia web experience, social network, dashboard and blogging platform. You can explore and share a variety of different content including text, photos, video, audio, articles, infographics, docs, the web and any other media with just one simple Burst! □

PRESENT ANYWHERE, ANYTIME WITH ZOHO SHOWTIME

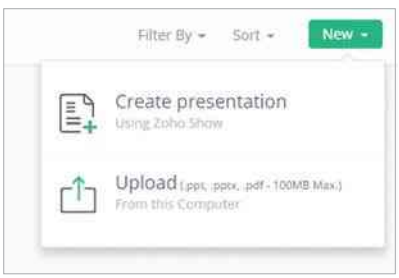
You can create or upload your PowerPoint presentation online and share it with your audience anywhere, anytime through this Web and mobile app

- Raj Kumar Maurya

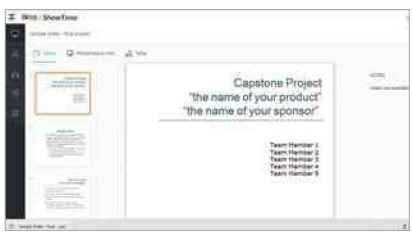
Zoho ShowTime is a web and mobile app which simply makes your presentation more focused and presentable to your audiences. Now you can show your presentation more interactively to your audiences or speakers. Show your presentations simultaneously across any device whether it is smartphone or desktop. Here we present a step-by-step on setting up Zoho ShowTime.

STEP 1: First of all, signup to Zoho ShowTime. After sign up, upload your presentation which you want to show your audience.

STEP 2: For uploading your presentation just click on New button on the top right side of the dashboard. The best thing about the ShowTime is that apart from uploading your presentation, it also offers an online presentation maker platform through which you can create your presentation online. For creating the presentation online click on Create presentation option.



STEP 3: Once you upload your presentation, the next step is to present it to your audience. Just click on the uploaded presentation which shows on your dashboard and just click on Present button at the top right side of your dashboard.



STEP 4: After clicking on the Present button, an audience key will be generated for your audience to join the session. You can also set the key according to your choice, like here, I have set the key to 1234.

STEP 5: After step 4, click on Launch presentation option and in the next screen click on START.

STEP 6: To view the presentation on your laptop visit the link shown in the step 5 screenshot. If you are using a smartphone, then either go to the link shown above or download the app from your respective App store.

STEP 7: The Zoho ShowTime offers two apps – one for the presenter and other for viewers. Download the ShowTime Viewer app, if you are a viewer and only want to view the presentation. If you are a presenter then just download the ShowTime Presenter App.

STEP 8: Another great feature of Zoho ShowTime is that you can directly deliver your interactive presentation from your PowerPoint by installing the PowerPoint plugin.

STEP 9: You can track your Audience Engagement, Questions, Feedback by using Zoho ShowTime Detail Analytics feature. This feature helps you to find out how many people were engaged in your presentation and for how long. □

5 LINUX ALTERNATIVES TO WINDOWS AND MAC OS

We discuss five key Linux alternatives to Windows and Mac and why switching over to Linux from Windows or Mac is getting easier by the day

- Ashok Pandey

Windows or Mac are two names which can easily be recognized in the world of PCs. Most of the devices are running on these operating systems. Some time ago, Windows stopped supporting Windows XP, and in the near future they might stop supporting Win 7 and 8 as well. They are offering an update from their old OS to latest Win 10, but it's only for a year after which you have to pay for this.

Mac machines are also popular but come with various premium options. Most of the people look for free or cheap alternatives available. Understanding the need of Windows and Mac alternatives, we tested a few free Linux distros. These are stable Linux distros offering various features without charging you a penny.

No more fears: Busting myths

In past years, Windows and Mac were a preferred choice because of some myths and less knowledge about Linux services. But now, no matter whether you have a startup or a giant business, critical technical support is always your priority. Windows and Mac, both offer technical support, and in the same way, you will get technical support from the Linux team whether you are using Ubuntu or Fedora.

.NET Support

Business using standardized Microsoft technology, specifically .NET web technology had the misconception about the tech support as well as the reliability of Linux. There is nothing to worry about now. Linux also supports .Net and you get reliable technical support for uninterrupted business abilities.

Can't use popular Win software

Wine is a free software available on Linux operating systems that lets you install and use Windows applications. So whether you want to use Photoshop, MS-Office, or any other popular Windows software, you can easily install and use them with 'Wine'.

Stability

As with Windows or Mac, which send regular patches and service packs, etc. to update your PC/laptop, similarly you get updates with Linux. But, it doesn't mean that your machine will be unstable as is the case with Windows after some updates. Linux machines will be available with 99.99 per cent stability even after rebooting the PC after every patch, service pack, or driver change.

Security

No one can claim, that Windows, Mac or Linux, or any other operating system is 100 per cent secure. There are loopholes that can lead to vulnerability. Viruses can attack these machines and can be hacked as well. However, if you compare that which one is the most vulnerable then Linux will be behind Windows and Mac. Linux offers excellent security from regular kernel updates to an almost daily list of security patches. Business owners who rely on commercially supported Linux systems will have access to every available security fix.

Linux for every machine

Whether you have a new machine with latest configuration or old machine with some outdated hardware you will be able to find suitable OS for your machine that will not only be light but will also be compatible with every hardware. So if you have an old machine with Windows XP or 98, or Mac machine with an old configuration which is running slow, Linux OS will boost their performance as well as provide you powerful experience.

Free of cost

Another big benefit of Linux is – it comes at no cost. Just download your preferred OS from the website and then on your machine. As it comes free of cost that doesn't mean you won't get support, yes you get all the supports from the community, which is wide enough to solve all your queries.

Flexible

Windows and Mac, both are user-friendly operating systems, but if you are looking for flexibility then again

Linux will win the match. However, Win and Mac both offer customization and you can do a lot more with them, yet there are some restrictions with these OS. Linux allows you to do whatever customization you want to. Moreover, several third-party applications and themes are available for the desktop.

Open Source Linux is an open-source operating system, meaning you can do a lot more things with it, which are not possible with Win and Mac. A developer can utilize benefits of open source OS and customize or modify the OS as per the requirements. Also, open source community can play with the OS to enhance its performance, security and more.

Command line Interface

Using the Linux command-line, you can do pretty much everything you need. However, Win and Mac users will argue that they can do everything with their machines even without using commands, yet Linux offers more power to the user to go out of the boundary and do whatever they want.

We have listed some of the top Linux OS available for you:

Ubuntu 15.10

The Ubuntu 15.0 is available for download and supports PCs, Laptops, and mobile devices as well. This comes with the latest developer tools and fresh desktop interface. For 'makers', Ubuntu now has support for more platforms – 20 versus 14 in version 15.04.

openSUSE Leap 42.1

openSUSE Leap is a new type of hybrid Linux distribution. It uses the source from SUSE Linux Enterprise (SLE), which gives Leap a level of stability. By basing openSUSE on SLE (SUSE Linux Enterprise), the core of Leap will be maintained by SUSE engineers, meaning it will get fixes and security updates from SLE.

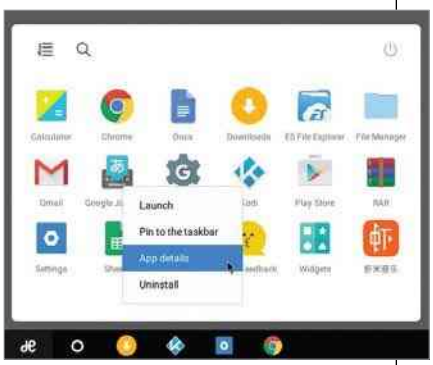
Linux Mint 17.3 "Rosa"

Linux Mint 17.3 comes with updated software and brings refinements and many new features to make your desktop experience more comfortable to use. The Driver Manager is more robust than before. It refreshes the cache before looking for drivers and reports update and installation errors if appropriate.

Fedora 23 Workstation

Fedora 23 Workstation is a reliable, user-friendly, and powerful operating system aimed at home users, hobbyists, students, and software developers. Fedora 23 Workstation features the latest GNOME 3.18 release courtesy of the GNOME community. This release of GNOME includes updates to the Files browser, and the new Calendar and Todo applications. Fedora 23 Workstation is the first release of Fedora to include LibreOffice 5.

Remix 2.0.101 OS



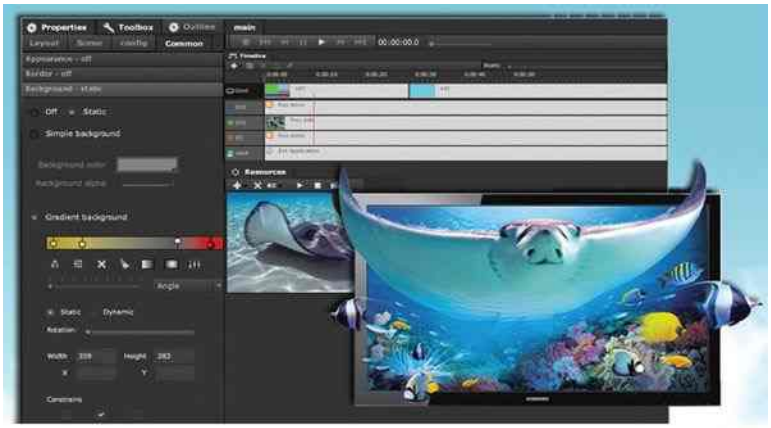
Built on the Android-x86 project, Remix OS for PC unlocks our next phase of development for Remix OS and introduces a whole new range of versatility to how and where you can Remix. By revitalizing your seasoned hardware with Remix OS for PC, breathe new life into it with over 1.6 million Android apps.

With Remix OS for PC, you can also conveniently house Remix OS on a USB stick. That means you can literally bring your Remix experience wherever you go. With most computers in the world powered by x86 chipsets, you should have no trouble finding the right hardware to run Remix OS. □

HOW DIGITAL SIGNAGE CAN BENEFIT SMALL BUSINESS OWNERS

Most of the free and open source digital signage software doesn't require any special equipment to work which makes it ideal for small businesses

- Sidharth Shekhar



Digital signage is a digital sign displayed on a monitor in a location-based business. Some common places for digital signs include offices, banks, waiting rooms, lounge and restaurants. Small businesses can use them to improve the customer experience while also adding revenue.

Digital signage serves a variety of location-based purposes for small businesses. Also, as each business is different so digital signage can be customized to fit specific needs.

One of the main reasons that many businesses are looking forward to adopt it, is the versatility it offers. Once the monitors are installed it becomes easy to change the content on the screen.

Let's have a look at some of the major benefits of using free open-source digital signage software's.

Why Open-source?

Open-source digital signage software allows businesses and developers to configure their own customizable apps and programs that will run on their network of displays. This is achieved by using computer programming languages such as JavaScript, Python, or Ruby.

Many small businesses are pretty open about their needs and just want to have content appear on a screen. Also, you don't have to pay out of pocket for the services as they are free which is great for businesses on a budget.

Know your needs

Before opting for open-source digital signage software it's always better to know your needs, knowledge, resources, and budget. If you are under the impression that open-source is good just because it's free then always remember that you'll need to have the skills to actually make it work or you'll end up spending more money than a proprietary alternative.

Customize as you like

Another major advantage of deploying open-source software is that it allows you to customize the features and settings according to usage which can always be aligned with your exact preferences. If you need to make any changes then all you need to do is to reconfigure the source code to adapt.

Flexible

Open-source digital signage software is flexible which allows you to configure it according to your needs. With a vendor's proprietary software, you're tied to their priorities but as open-source licensing is free to the public, you're not locked into anything.

Stability

OSS software is extremely stable as it goes through rigorous testing and has faster release cycles which mean that you don't have to wait for a long time. Also, security is never an issue as everyone and anyone can modify the security issues in OSS once they are found.

To Conclude…

Most of the free and open source digital signage software's doesn't require any special equipment to work which makes it ideal for small businesses. By simply deploying any software and a couple of old workstations, you can easily set up a digital signage server that can push out images and video to kiosks automatically. □

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EDIT YOUR PHOTOS WITH FREE YET PROFESSIONAL ONLINE TOOLS

Let your creativity flow with designing tools available free of cost, enhance the beauty of your clicked images, add effects and much more...

- Ashok Pandey

Earlier, when you thought of editing photos the first software that came to mind was PhotoShop. But, nowadays technology has changed everything and you don't require any professional expertise as well as costly software to do that. Creating banners or marketing material can be done with ease using free tools.

3 key advantages of using free tools

Convenience - Whether you are using the web-based tool or an app on your smartphone or tab. These tools work seamlessly and give you the freedom to do various things with your image. A heavy software will consume lots of memory of your PC or laptop but if you are using the web-based tool, then without installing it on your PC, you can edit the image. Also, if you are using an app, it will take up less space and also bring convenience to modify images on the go.

Web-based tools support all platforms - Web-based tools can be used with any machine that can run a browser. There is no specific hardware requirement, be it Windows, Mac, Linux or Android, simply open the web page and start editing.

Free of cost - Forget about paying a huge amount to buy a software that will let you edit images. You can choose one of the best tools available online, at no extra cost and add various shades to your images. These tools come with various editing features and are easy to use, enabling the user to add various effect in a few clicks.

Are you now ready to give it a try. We have shortlisted some of the free and popular editors for you. These tools not only allow you to edit but also do a lot more, for instance, create a collage, apply light touch ups, etc.

GIMP

Platforms: Linux, Windows, Mac
Price: Free

The free and open source image editor is useful for everyone. Whether you are a graphic designer, photographer, illustrator, or scientist, GIMP provides you with sophisticated tools to get your job done. You can further enhance your productivity with GIMP thanks to

many customization options and third party plugins. It comes with a wide toolset including painting tools, color correction, cloning, selection, and enhancement.

Pixlr

Platform: iOS, Android
Price: Free

Pixlr is one of the most popular online photo editors. It boasts more than 600 effects, overlays, and borders and lets you do all the main things you'd expect from a photo editor, from cropping and re-sizing to removing red-eye and whitening teeth. Even if you've never edited

a picture or are a pro, Pixlr has all the tools and effects that you need.

Paint.NET

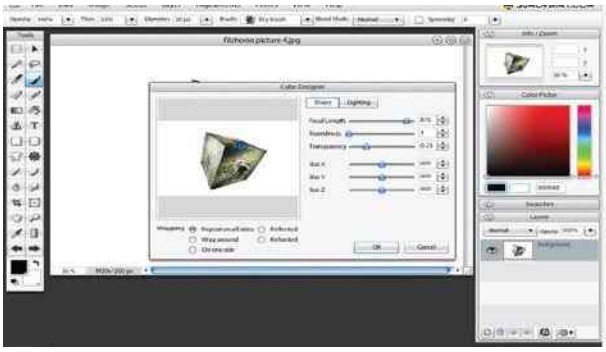
Platform: Windows
Price: Free

In order to handle multiple images easily, Paint.NET uses a tabbed document interface. The tabs display a live thumbnail of the image instead of a text description. This makes navigation very simple and fast. Many special effects are included for enhancing and perfecting your images. Everything from blurring, sharpening, red-eye removal, distortion, noise, and embossing are included. Also included is the unique 3D Rotate/Zoom effect that makes it very easy to add perspective and tilting.

Sumopaint

Platform: Browser or iPad
Price: Free for basic online version

Sumo Paint is a full featured painting and image editor that works on browser as well as iOS application. It is a full-featured painting and image editing application featuring an active art community of over 570,000 registered members and over 2,000,000 images. It comes with 11 Blending modes, 37 Filters and effects and more.



Pickmonkey

Platform: Browser or Android
Price: Free

This web-based tool lets you edit photos easily and add filters, frames, text, and effects, etc. Create gorgeously professional images with the tool. You don't have to decide which of your photos is the best, just bring them together in a collage. Do it your way with responsive layouts, pattern swatches, and dazzling effects. □

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WE'RE SOCIAL AS WELL:

8 TOOLS TO MANAGE CUSTOMERS

Here is a list of 8 free customer management tools that let you embed social media platforms, increase customer support, add features to existing CRMs and much more...

- Sonam Yadav

1. Freshdesk

Freshdesk is a helpdesk solution that offers everything you need to deliver exceptional customer service. It helps to manage all your customer conversations in one place, no matter what the source - email, phone or social media, so you can offer support that is both personal and quick. It has a multi-channel feature that guarantees exceptional support through phone, email, your website and even Facebook and Twitter. All from one place!

2. AnswerHub

AnswerHub uses Q&A format to help customers ask questions easily, route them to the correct experts, and provide a single place to find answers. Features like ideation, gamification, and community analytics help to keep customers engaged and spot opportunities to improve. It is a tool that offers more than just a question and answer model and it allows you to create an interactive Q&A community.

3. Zendesk

Zendesk is the leading cloud-based customer service software solution. Zendesk helps to lower support costs, raise productivity, and increase customer satisfaction. Zendesk is easy to try, buy, implement, and use. It is loved by both service teams and customers.

4. SupportCenter Plus

It helps you track and resolve customer issues quickly, thereby delivering superior customer support and taking customer satisfaction to the next level. SupportCenter Plus is a web-based customer support software that lets organizations effectively manage customer tickets, their account & contact information, the service contracts and in the process providing a superior customer experience.

5. iSupport

iSupport is used to help professionals every day to help them solve their most demanding support issues. iSupport enables you to manage Incidents, Problems, Changes, CMDB, Assets, Knowledge, Workflows, and more.

6. FocalScope

It is a web-based live chat and ticketing help desk solution which supports its users to manage large amounts of emails & provide high-quality customer service. The system is browser-based for both Windows and Mac. FocalScope offers integrated features like Personal/Group Email Accounts, Email Threading, Ticket Ownership, Ticket Priority, Email Workflow Processing and To Do lists.

7. CustomAnswers

CustomAnswers provides a flexible and robust CRM platform that is customizable to a vast array of business processes and workflows. Across all channels of communications, phone, emails, walk-in etc, capture manage and track all customers interactions. it is a highly customizable tool and easy to use.

8. HappyFox

It helps to track and manage all customer support requests across multiple channels like email, chats, social media and phone in a centralized ticket support system.Integration with other web apps like CRM, live-chats, voice and bug tracking apps makes it practical help desk. Similar customer support queries can be handled using canned actions and smart rules to automate responses. □

10 OPEN SOURCE TOOLS FOR CLOUD INFRASTRUCTURE MANAGEMENT

Here is a list of ten tools which help you build, manage and monitor networks of virtual machines, private or hybrid clouds, tweak and track cloud services and much more...

- Anuj Sharma

1. vOneCloud 1.6

It is an OpenNebula distribution optimized to work on existing VMware vCenter deployments. It deploys an enterprise-ready OpenNebula cloud just in a few minutes where the infrastructure is managed by already familiar VMware tools, such as vSphere and vCenter Operations Manager.

2. CloudStack

Apache CloudStack is designed to deploy and manage large networks of virtual machines. This Apache Project offers a turnkey Infrastructure as a Service (IaaS) cloud computing platform. It's used both by public cloud computing vendors and by organizations running their own private clouds.

3. Eucalyptus

Eucalyptus allows organizations to easily migrate apps and data to build private or hybrid cloud environments that are compatible with Amazon Web Services.

4. Synnefo

Synnefo is a complete cloud infrastructure stack that provides Network, Image, Volume and Storage service. It manages Google Ganetti, OpenStack, and KVM.

5. FOSS-Cloud

The FOSS-Cloud is a Software that enables you to create your own Private or Public Cloud. It is an integrated infrastructure to provide cloud-Services, Windows or Linux based SaaS. FOSS-Cloud covers all of the aspects of an Open Source IT environment.This multi-faced cloud computing solution includes virtualization, cloud desktop, IaaS, PaaS and SaaS capabilities.

6. openQRM

openQRM software manages a data center's infrastructure to build private, public and hybrid IaaS (Infrastructure as a Service) clouds. This enterprise-class tool combines data center management system administration and IaaS provisioning into a single tool.

7. OpenShift

OpenShift's helps you to make your job easier by taking care of all the messy IT aspects of app development and allows you to focus on your job by Coding your Application and satisfying your customers.

8. Cloud Foundry

Cloud Foundry is used to deploy your applications on a variety of infrastructures, including Amazon Web Services, OpenStack, and vSphere. It supports Java, Ruby, and Node applications out of the box.

9. Docker

Docker provides a highly reliable, low-cost way to quickly build, ship, and run distributed applications at scale. It gives developers the freedom to define environments and create apps faster and easier and flexibility for IT ops to quickly respond to change.

10. Salt Stack

SaltStack software is easy enough to get running in seconds, scalable enough to manage tens of thousands of servers, and fast enough to control and communicate with them in milliseconds. SaltStack delivers a dynamic infrastructure communication bus used for remote execution, configuration management and much more. □

6 DIY MOBILE APP DEVELOPMENT PLATFORMS

You can use these web tools to create mobile apps easily without having any coding knowledge

- Ashok Pandey

Do you have a tight budget for mobile app development to reach out to your target audience? No need to worry about the high app development charges anymore. Now you can develop a mobile app on your own. As the app market grows, the demand for cheap app development services also increases, and a few companies come with their platforms. These platforms are quite easy to use and don't require technical knowledge, meaning anyone can develop an app easily and quickly.

Using app development platforms, you can save your money as well as time. No need to contact a good developer and tell them about your requirements. Developing an app with these platforms is like drag and drop. This leads to saving your time as well as money.

Here are some of the useful DIY app development platforms…

Appy Pie

Price: Trial version is free and you need to pay $33 per month for Platinum version.

This is a cloud-based DIY mobile app development tool enabling users to create an app without programming skills for Windows, Android, and iOS, and publish it to Google Play or iTunes. No need to install or download -- just drag and drop pages to create your own mobile app online. Once it's complete, you receive an HTML5-based hybrid app that works with all platforms, including Blackberry.

Appery.io

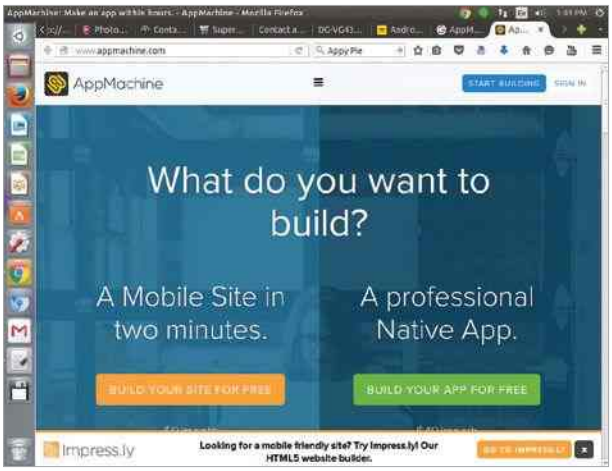
Price: Trial version is free of cost and $180 per month for Premium features.

The cloud-based mobile app builder lets you create apps for Android, iOS and Windows Phone, and includes Apache Cordova (Phone Gap) with access to its built-in components. Without installing or downloading, you can get started quickly. It includes a visual editor using drag and drop components to build the UI. You can connect to any REST API and use it in your app, and instantly add a cloud database and backend to your app if you need to store data.

AppMachine

Price: Pay one time fee for your desired plan which starts at $499 to $899.

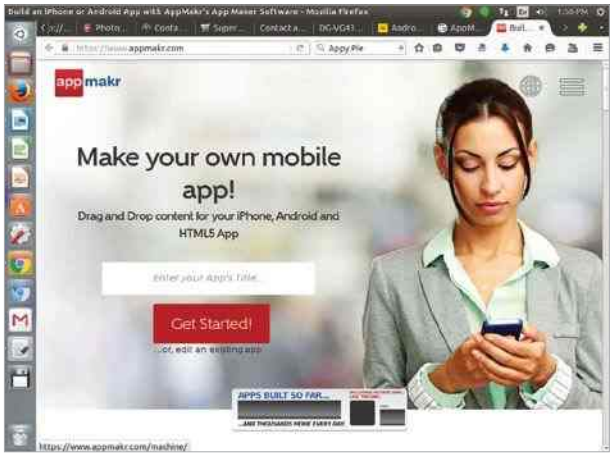
This platform enables to build and design professional native apps for both iOS and Android. Using the drag-and-drop interface, you can combine different building



blocks that offer a variety of features, such as information, photos, and video. You can design the app in your own unique style and choose your navigation paths, colors, fonts, and icons, taking complete control of layout and watching your progress using the Previewer. The building blocks also let you link your app to Facebook, Twitter, or online stores.

AppMakr

Price: Pay one time fee of $99 for self-publishing.



The app creation platform lets you develop iOS, Android, and HTML5 apps. You can make as many apps as you want, with unlimited updates, and utilize a number of features, including push notifications, high-resolution photo galleries, live updates, music and video streaming, chat rooms, Google Maps integration, shared events calendars, in-app shopping, and much more.

InstaAppy

Price: Subscription plans start at ₹42,000.

Instappy is powered by its self-developed Content Management System (CMS), which is equipped to handle updates, app customization, analytics, notifications, etc. It comes with a dual backup system where data is mirrored in a secondary cloud server with restricted access in addition to the inscription.

Create your own Mobile App using Instappy

Instappy is one of the useful tools to create your app quickly and easily. This is a Do-it-yourself platform that lets you develop mobile apps without having knowledge of coding. Build native applications for iOS and Android. It comes with almost everything you need to create apps.

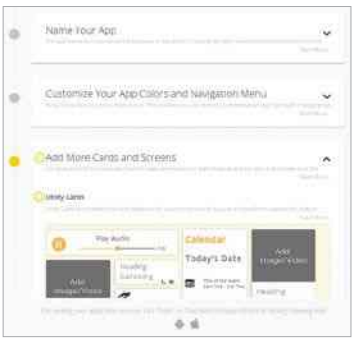
This platform lets you first try for free and then if you are satisfied with your developed app then can publish that on Android and iOS stores.

Lets understand how you can do that…

Visit the website and then click on "Try for free", now you will get three options to choose from -

- Content Publishing Apps
- Retail and Catalogue Apps
- Enterprise Apps

Choose, which one you want to create, we chosen "Content Publishing Apps" and then click on 'create app'. Now you will get a list of categories and subcategories to choose.



Now you need to provide a name to your project, in our case we kept id "demo". And then you get an option to 'Customize Your App Colors and Navigation Menu'. In this, you can choose

- Screen Background
- Navigation Menu
- Contact Us
- Add E-Store to app
- Create Login For Your User

Next, 'Add More Cards and Screens' this enables you to add a calendar, heading/subheading, etc from Utility cards.

You can add social channels as well by using Regular APIs

Also, you can add Rich Media APIs

Once you are done, click on Finish to publish the app on stores. □

20+ FREE POPULAR TOOLS FOR ENHANCING PERSONAL PRODUCTIVITY

From project tracking to email scheduling to office productvity suites, here are our favorite productivity tools that you can install to satiate your needs

- Anuj Sharma

PROJECT MANAGEMENT AND TIME TRACKING

Feedcamp

Freedcamp is used for project planning, organization, and action. It allows you to share project to-dos, project files, and join in discussions with team members. It is free for unlimited number of users and projects. After initial sign up users can use a number of basic applications and can add additional functionality at a later stage. The core applications allow users to assign tasks to people, set milestones, schedule events on a calendar, use discussion boards, and track time spent on tasks.

While adding team members and syncing with Google Calendar would definitely be a pro feature with other applications, Freedcamp lets you do the vast majority of activities pro bono. If there are advanced features like CRM and invoices you want to integrate, you can pay per add-ons so that you're only paying for what you really need. I'd definitely recommend checking this one out!

Toggl

Toggl is a simple time tracker tool to calculate the time taken to complete various tasks. It also lets you look at reports and see how much time you spent on different projects throughout the week. Time entries and active timers are synchronized in real-time via a cloud service to the web site and various applications. Reporting features lets users track the time spent on various projects and analyze productivity.

Trello

It is an another project management tool that makes collaboration easy whether you're organizing work projects, family chores, travel plans, or just about anything else. It can also be used as a weekly planner, with lists for each day of the week. Trello has a variety of work and personal uses including real estate management, software project management, school bulletin boards, lesson planning, and law office case management.

VIRTUAL MEETINGS

MeetingBurner

MeetingBurner is not only used to fire up online meetings, but can also be used for hosting webinars, and sharing your screen. It includes Skype integration, conference lines, and one click recording and sharing. The in-built analytics lets you know how your users

interact with your content at the meeting. You can join online meetings from your mobile device and the application gives participants access to the meeting information, screen sharing, chat, participant lists, streaming audio, and more.

Join.Me

It is a simple online meeting solution that makes collaborating easier than ever and does not require downloads for viewers. Instantly share your ideas and collaborate in seconds from your desktop to your tablet to your smart phone. It allows up to 10 video feeds at a time. Presenters can also set whether participants can talk or are muted. Online chat is available in all video conferences.

Fuze Meeting

It is a web conferencing service that works particularly well for international businesses or entrepreneurs who are more on the move. In addition to being compatible with Windows, Mac and Linux, it is also available for mobile devices. The service can handle up to 12 video streams at once and also includes chat feature for one-on-one side conversations. It is also integrated with cloud wherein you can add content to the cloud at any point during the meeting to share on the screen or via a link.

OFFICIAL CHORES

Evernote

It is one of the popular cross-platform note-taking services, allowing users to take and upload notes, pictures, audio and video snippets and organize them into cloud notebooks that can be synced across different devices. Loaded with powerful organization, formatting and sharing options, Evernote is still king even with competitors such as OneNote and Google Keep. The free version lets users upload 60MB of content monthly, with paid accounts allowing more options.

Freedly

The mobile app merges the best of multiple interfaces, with a text-only list view for quick browsing through your news feed and uses different layouts for a more visual treat. Feedly lets you organize all your favorite publications, podcasts and YouTube channels into collections and receive updates when new stories and videos are published. Users can sign up for topical updates from a variety of websites and blogs, or add custom subscriptions from sources like RSS. If you are a social butterfly, the app also integrates seamlessly with Facebook, Twitter, Evernote, Buffer, OneNote, Pinterest and LinkedIn so that you can easily share the stories you read in your Feedly account with your friends and colleagues.

Google Translate

Going abroad? Google Translate is the companion you need. Translate makes it easy to convert text from one language to another in ways that actually make sense. Sure, you can type in a phrase in your native tongue and have Translate move it into another language. But you can also take a snapshot of a sign, menu, or document with your phone and have Translate convert it to the text. You can speak into your phone in one language and have Translate speak back in another. And you can do it all offline, provided you download the necessary language packs in advance.

Expensify

Keeping track of expenses can be a pain while you are more on the move. Expensify can ease the burden. The app provides an easy-to-follow interface for tracking time, miles, receipts, and invoices on the go, then generating on-demand reports as needed. Expensify lets you scan receipts as you get them, after which it automatically pulls out the relevant info from the images and puts it into your records. It can tap into your phone's GPS to log miles as you drive, and it offers offline functionality for the times when you can't get a signal.

Skype

Skype is a handy communication tool that offers free instant messaging, video and voice calls, and file sharing. Its paid features include mobile and landline calls, text messaging and access to Skype Wi-Fi public hotspots. It's a great, low-cost option that facilitates communication and collaboration with team members.

CUSTOMER RELATIONSHIP MANAGEMENT

Sugar CRM

A complete CRM system for businesses of all sizes. Core CRM functionality includes sales automation, marketing campaigns, support cases, email, calendaring and more. Developers can easily extend the application with new CRM functionality unique to your business. It has email integration that allows you to email clients from within the application without needing to open an additional program and toggle between the two. Many of the tools included with SugarCRM also doubles up to keep track of your employees' workflow and performance. It can also display which project each employee is assigned to and follow his or her interactions with your clients.

VIENNA Advantage

It is a full ERP and CRM covering all functional areas such as Document Management, Sales Force Automation, Order Management, Materials Management, Financials,

Purchase, Budgeting and Controlling, Support, Service Contracts, Marketing, HR, Payroll, Workflow Management and many more. It is based on C#.Net with a HTML5 UI. It also offers a mobile UI for iPhone and Android.

OpenCRX

It meets the needs of organizations requiring multifunctional, enterprise-wide coordination of sales generation, sales fulfillment, marketing and service activities to customers, partners, suppliers or intermediaries. It is flexible and can be extended and customized in all aspects and at all levels: starting from simple, XML-based GUI customizing up to modifying the standard business-logic or even extending the API.

SOCIAL MEDIA MARKETING

Buffer

Buffer is a tool designed to manage social networks, by providing the means for a user to schedule posts to Twitter, Facebook and Linkedin. Its best feature is its scheduling which allows you to pre-post content to go out at specific times of the day whether you're around or not. It also allows you to build up a queue of content to share with your friends and followers, and keep an track on your posts with Buffer's analytics to see which posts performed best.

Hootsuite

Hootsuite is a social media management system for brand management created by Ryan Holmes in 2008. The user interface is clean and takes the form of a dashboard, and supports social network integrations for Twitter, Facebook, LinkedIn, Google+, Foursquare, MySpace, WordPress, TrendSpottr and Mixi. Additional integrations are available via Hootsuite's App Directory, including Instagram, MailChimp, Reddit, Storify, Tumblr, Vimeo and YouTube.

Rignite

It covers all your social media needs at one social media platform, covering daily posting, goal-based campaigns, and analytics data. Its campaign based posting feature is unique which allows you to set a specific set of posts to promote a product, an event or a promotion and track the results of that campaign.

EMAILS

Boomerang

Write an email, schedule it to be sent automatically and Boomerang will take it from there. You just need to compose the message as you normally would, then click the Send Later button. The textbox in the app understands phrases like "next Monday" to tell Boomerang when to send your message that also adds for the convenience. It can also bring your email back to your inbox, marked unread, starred or even at the top of your message list.

Right Inbox

With Right Inbox, it does not matter when you have an idea be it day or at night. You can set a date for sending the email and it will automatically send your emails at the specified time. You can also add a reminder to an email, get notified when you need. When a recipient opens a tracked email, Right Inbox for Gmail will send you a detailed report including their location and IP address.

PRESENTATIONS

Prezi

It is a cloud-based presentation software that employs a zooming user interface (ZUI) allowing users to zoom in and out of their presentation media. Under Prezi Collaborate up to ten people that may be in same location or geographically separated can co-edit and show their presentations in real time. Users participate in a Prezi simultaneously, and each is visually represented in the presentation window by a small avatar. You can also invite participants to edit the Prezi presentation at a later time if they wish wherein a link will be sent and the participant has up to ten days to edit the presentation.

Slide Rocket

It is an online presentation platform that lets users create, manage, share and measure presentations and is provided via a SaaS model. Being a cloud based app it can extract information from the Web. Thus if you want to add a video to a slide, just click on the Video button on the main toolbar that opens a Web page where you can select a video from Flickr or YouTube, or upload a video from your hard disk.

#Slides

It allows anyone to create a professionally designed presentation in mere minutes with just a few clicks of the mouse. To make your experience with #Slides seamless and to further customize your slide, you can open your #Slides presentations within PowToon Studio. You can also mix your slides with funky animations and designs that will give you a great presentation in the end. □

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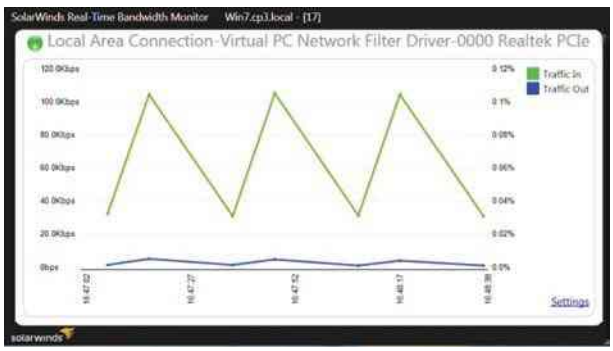
12 FREE AND OPEN SOURCE BANDWIDTH MONITORING TOOLS

Monitoring network bandwidth is very important for network administrators to rectify the problems that are choking their bandwidth. Here are 12 free best tools for monitoring network bandwidth. These free tools also provide visual representation and graph of how much data is being consumed by the users

- Raj Kumar Maurya

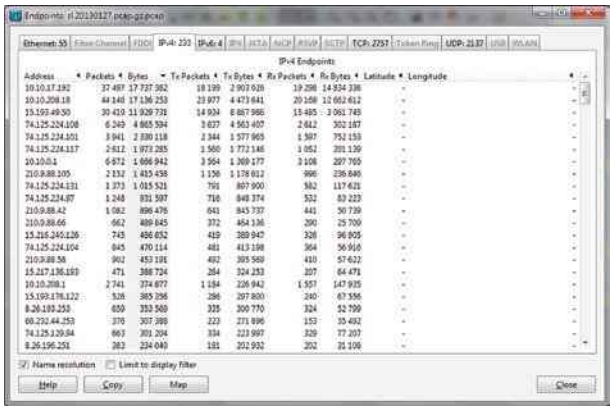
SolarWinds

SolarWinds Real-Time Bandwidth Monitor polls your interface as frequently as every half second and reports real-time bandwidth usage on an easy-to-understand graph. Set critical and warning thresholds to instantly see when usage is out of bounds.



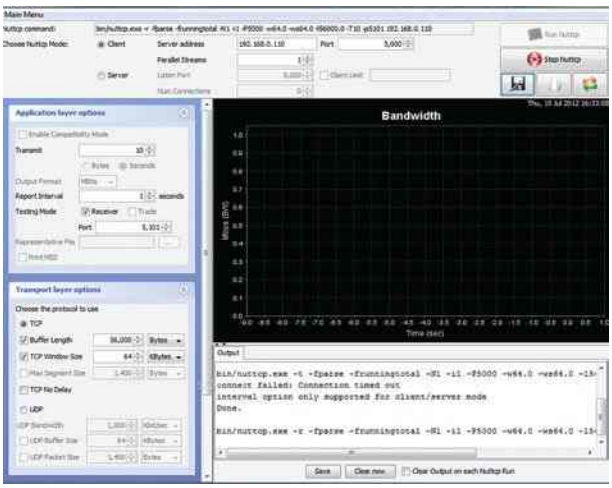
Wireshark

It is useful in network troubleshooting, development of communication and software protocol, analysis and education. This is a multiplatform application that uses widget toolkit from GTK+ in its latest releases, as well as Qt in development versions to execute its UI and utilizing pcap in packet capturing.



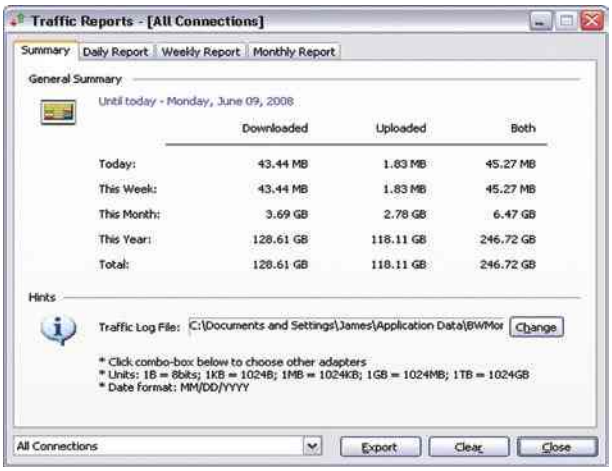
Nuttcp-Cygwin-GUI

This is the GUI front end in Nuttcp. The easy to use tool is useful for testing network performance that has GUI.



Bandwidth Monitor

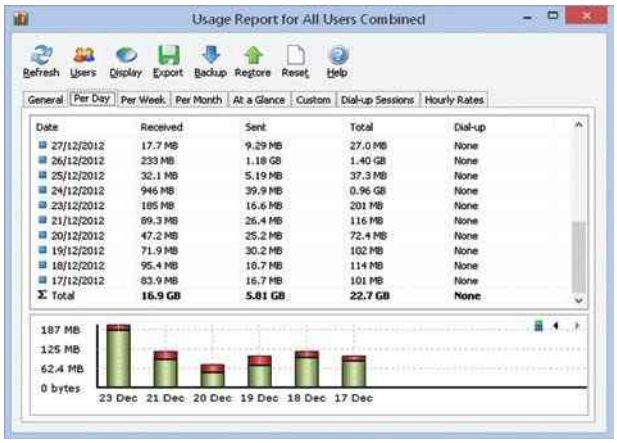
This application evaluates bandwidth usage on the installed computer. Bandwidth Monitor displays actual download as well as upload speeds both in numerical



and graphical forms, registers bandwidth usage, as well as offering weekly, monthly, and daily bandwidth usage reports. This tool evaluates every network connection on computers like LAN network, VPN connection and Internet network.

NetWorx

This is free and simple, yet a potent tool that assists you to evaluate objectively the situation of your bandwidth. You may use Network to gather data on bandwidth usage and measure your internet speed or other connections in the network. The tool can assist you to identify probable sources of problems in a network, make sure you never exceed bandwidth limits set by the ISP or tracking suspicious network activities characterized by Trojan horses as well as hacker attacks.



Cacti

Cacti is a complete RRDTool-based graphing solution. It stores all of the necessary information to create graphs and populate them with data in a MySQL database. The frontend is completely PHP driven. Along with being able to maintain Graphs, Data Sources, and Round Robin Archives in a database, Cacti handles the data gathering. There is also SNMP support for those used to creating traffic graphs with MRTG

Master shaper

MasterShaper is an open source network traffic shaper which provides a Web Interface for Quality of Service (QoS) functions of newer Linux 2.4- & 2.6-Kernel-Serie. It provides a Web Interface which lets you define bandwidth pipes and filters (based on IP, MAC, ports, protocols, ipp2p, layer7-filter.

BandwidthD

Open source BandwidthD tracks usage of TCP/IP network subnets and builds HTML files with graphs to display utilization. Charts are built by individual IP.

PRTG Network Monitor

PRTG Network Monitor runs on a Windows machine within your network, collecting various statistics from the machines, software, and devices which you designate.

Sarg

Squid Analysis Report Generator is a tool that allows you to view "where" your users are going to on the Internet. Sarg generates HTML reports, with information's about users, IP Addresses, bytes, sites, and times.

Internet Bandwidth Monitor(IBM)

This is a simple software that monitors bandwidth usage of any network adapter.

BitMeter OS

A bandwidth meter, for monitoring internet connection speeds and usage. You can view a more in-depth breakdown and export results to a CSV file from the History tab. The Alerts tab allows you to set notifications for when BitMeter OS reaches given limits. □

8 OPEN SOURCE FIREWALLS TO SECURE YOUR BUSINESS

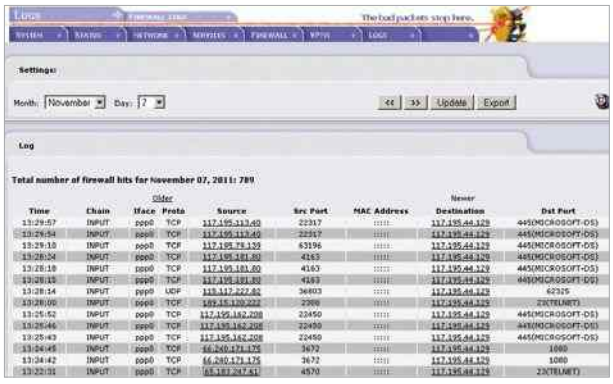
There are lots of freely available firewalls in the open source world, which provide enough features for basic network protection. Here are 8 worth checking out

- Raj Kumar Maurya

There is a dark side of the internet which is full of hackers and spammers and you must protect your business networks by implementing reliable firewalls. The developer of security products and commercial firewalls are mostly built on an open source operating system like Linux, FreeBSD and OpenBSD. From tiny embedded security products to giant enterprise firewall all are using customized open source operating system as their base OS. There are dozens of open source firewall application available with community support. Here in this article, we've identified some most popular open source firewalls that can turned your commodity hardware in to full fledged Firewall system.

1. IPCop

IPCop is an Open Source Linux firewall distribution, It is a stable, secure, user-friendly and highly configurable Firewall management system. IPCop provides a well-designed web interface to manage the firewall. It's very useful and good for Small businesses and Local PCs. It can turn your Old PC as a secure VPN to provide a secure environment over the internet.

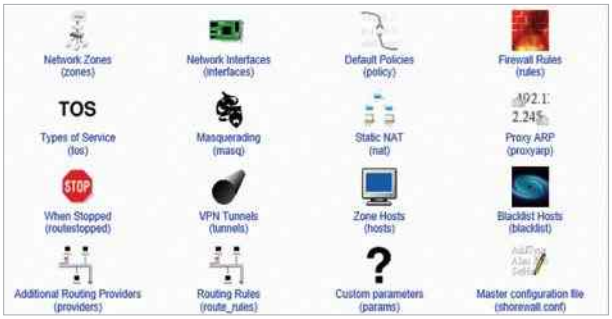


Key Features

- Monitor and show the performance Graphics for CPU, Memory, and Disk as well as Network throughput.
- Provide logs.
- Multiple language support.
- Provides very secure stable and easily implementable upgrade and add on patches.

2. Shorewall

Shorewall or Shoreline Firewall is another very popular Open source firewall specialized for GNU/Linux. It is built upon the Netfilter system built into the Linux kernel that also supports IPV6.



Key Features

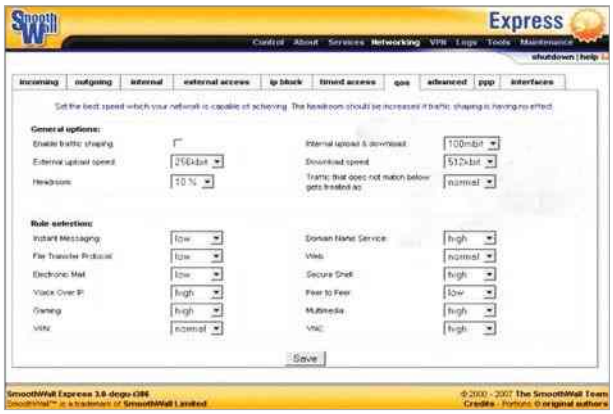
- Tracking facilities for stateful packet filtering.
- Centralized firewall Administration.
- A GUI interface with Webmin control Panel.
- Multiple ISP support.
- Supports Masquerading, VPN, and port forwarding.

3. SmoothWall & Smoothwall Express

Smoothwall Express is based on the Linux operating system. Smoothwall is configured via a web-based GUI and requires absolutely no knowledge of Linux to install or use. A freely distributable version of SmoothWall is knows as SmoothWall Express.

Key Features

- Supports a wide variety of network cards, modems, and other hardware
- Real Time content filtering
- Manage and configure the software using a web browser
- Run efficiently on older, cheaper hardware
- Develop a supportive user community



- Traffic stats management on per IP, interfaces and visit basis
- Backup and restoration facility like.

4. pfSense

pfSense is a very reliable firewall for FreeBSD servers. Its based on the concept of Stateful Packet filtering. It offers wide ranges of feature which you might be found only in some expensive commercial firewalls only.

Key Features

- Highly configurable and upgraded from its Web – based interface.
- Can be deployed as a perimeter firewall, router, DHCP & DNS server.
- Configured as wireless access point and a VPN endpoint.
- Traffic shaping and Real Time information about the server.
- Inbound and Outbound load balancing.

5. IPFire

IPFire is another open source Linux based firewalls for Small Office, Home Office (SOHO) environments. Its designed with modularity and highly flexibility. IPfire community also took care of Security and developed it as a Stateful Packet Inspection(SPI) firewall.

Key Features

- Can be deployed as a firewall, a proxy server or a VPN gateway.
- Content filtering
- Inbuilt Intrusion detection system
- Supports through Wiki, forums and Chats
- Support hypervisors like KVM, VmWare, and Xen for Virtualization environment.

6. Endian

Endian firewall is another Stateful packet Inspection concept based firewall which can be deployed as routers, proxy and Gateway VPN with OpenVPN. Its originally developed from IPCop firewall which is also a fork of Smoothwall.

Key Features

- Bidirectional firewall
- Snort Intrusion prevention
- Can secure web server with HTTP &FTP proxies, antivirus and URL blacklist.
- Can secure Mail servers with SMTP and POP3 proxies, Spam Auto-learning, Greylisting.
- VPN with IPSec
- Real-time Network traffic logging

7. ConfigServer Security Firewall

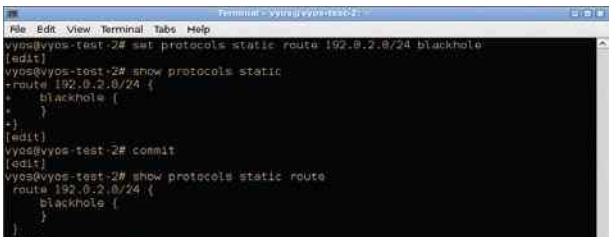
Configserver security and firewall is a cross platform and a very versatile Firewall, it's also based on the concept of Stateful packet inspection (SPI) Firewall. It supports almost all Virtualization environments like Virtuozzo, OpenVZ, VMware, XEN, KVM and Virtualbox.

Key Features

- Can be easily integrated with popular web hosting control panels like cPanel, DirectAdmin, and Webmin.
- Notifies excessive resource user and suspicious process via email alerts.
- Intrusion detection system.
- Checks for exploits.

8. VyOS

VyOS is a community fork of Vyatta, a distribution discontinued in 2013. It is a network operating system that provides software-based network routing, firewall and VPN functionality. VyOS is based on Debian GNU/Linux and is completely free and open-source. Its features include the ability to run on both physical and virtual platforms, and support for para-virtual drivers and integration packages for virtual platforms.



Key Features

- Task scheduler
- SNMP
- Configuration versioning and remote archiving
- Event handling
- Remote Syslog
- Web proxy with some URL filtering support (no HTTPS filtering) and more. □

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10 OPEN SOURCE ECOMMERCE PLATFORMS

Building an ecommerce platform for businesses has become easier over the years. Through this article we talk about 10 free e-commerce tools you can use to build one

- Raj Kumar Maurya

Open-source eCommerce platforms offer many advantages for small businesses. A merchant can also develop his own eCommerce platform by using Open-source solutions. The support option in the open source platforms is limited as compared to the premium or proprietary e-commerce platforms. But that doesn't mean open-source offers nothing. Open source not only minimizes the cost of building your e-commerce portal but also offers customizability, scalability, and communities of developers to assist new merchants.

Choosing the right Opensource platform for your e-commerce business, where an online transaction is the most important part might be difficult. So, here is a list of ten open source e-commerce platforms that let you run all business transactions online. They also let you create SEO friendly URLs, gift cards, offer discounts, create email templates and much more…

Magento Community Edition

Magento Community Edition is the free and open source version of the e-commerce platform. Merchants can access added features by installing extensions and themes from the huge Magento Connect marketplace.

OpenCart

OpenCart is an open-source, PHP-based e-commerce solution for online merchants. OpenCart has a very loyal and active community for user support, as well as a list of commercial partners for professional installation and customization.

PrestaShop

PrestaShop is an open-source e-commerce solution, written in PHP and based on the Smarty template engine. It features cross-selling, downloadable products, product export, one-page checkout, shipping discounts, and much more.

Zen Cart

Zen Cart features more than 1,800 add-ons in 16 categories. Zen Cart's support community has approximately 150,000 members and 200,000 threads.

osCommerce

osCommerce is one of the first open-source e-commerce applications. More than 7,000 free add-ons have been uploaded by its community to customize an online store. osCommerce facilitates direct communication with other community members through the Live Chat room.

Zeuscart

The best thing about Zeuscart is its user interface, which is rich, attractive, user-friendly and generally less boring than most of the open-source UIs. It is designed for small and medium businesses in mind. Users can make the most of SEO friendly URLs, gift cards, discounts, email templates and tier-pricing, which makes it possible to decrease prices for bulk orders.

Afcommerce

If you want to keep your e-commerce platform really, really simple, then Afcommerce could be the option for you. It has a speedy one-page checkout, customer help pop-up windows and customer accounts are generated automatically from orders.

SimpleCart .js

You can now add increment, decrement, and remove buttons to your cart. You can also rearrange items, change the HTML tags, do whatever you like to display on your shopping cart and how you want. It's lightweight, fast, simple to use, and completely customizable.

Tomato Cart

TomatoCart is a web desktop application that mimics the user experience of a desktop Operating System, offering features and applications similar to a PC environment so that users can easily start work.

StoreSprite

StoreSprite offers many features that you'd expect to find only in paid-for and more popular platforms. These include loyalty points, customer ratings and reviews, status notifications, order tracking, special offers, best sellers and shopper accounts.

How to Install and Configure PrestaShop on Ubuntu

Let's check how to install this popular eCommerce platform on Ubuntu through these few simple steps.

PrestaShop is a free, open source e-commerce solution. It supports payment gateways such as DirecPay, Google Checkout, Authorize.Net, Skrill, PayPal, PayPal Payments Pro (Direct) and EBANX Checkout via their respective APIs. Further payment modules are offered commercially. PrestaShop uses a web template system which allows users to customize store themes and add new features through add-on modules.

Here we used Ubuntu server with LAMP installed and should have a static IP address. Here, I use 192.168.5.119 as my IP.

STEP 1: Download the zip file of PrestaShop and extract the file in the /var/www/html folder by using given commands:

```
cd /tmp
wget http://www.prestashop.com/download/old/prestashop_1.6.0.9.zip
apt-get install unzip
unzip prestashop_1.6.0.9.zip -d /var/www/html/
```

STEP 2: Change the permissions for PrestaShop, as follows:

```
chown -R www-data:www-data /var/www/html/prestashop/
```

STEP 3: We need to initialize a database for PrestaShop, create the database for the PrestaShop as follows: Here we are adding database=pcquestdb user= pcquestdbuser and password= pcquestdbpassword:

```
mysql -u root -p
CREATE DATABASE pcquestdb;
CREATE USER pcquestdbuser@localhost IDENTIFIED BY ' pcquestdbpassword';
GRANT ALL PRIVILEGES on pcquestdb.* to prestashopuser@localhost
FLUSH PRIVILEGES;
exit
```

STEP 4: Restart services

```
service apache2 restart
service mysql restart
```

STEP 5: Open your browser and proceed with PrestaShop web-installation by using the link http:192.168.5.119/prestashop/install. Replace the IP address 192.168.5.119 with your IP address then select your language and press Next and in next page select check-box for accepting terms and conditions. Press *Next*.

STEP 6: In this step, it will check whether the required software suits your system for PrestaShop. If something is missing, it will show you the error message with required software. Install the required package then Press Next and fill-in the credentials.

STEP 7: Next, configure the database to be used by PrestaShop, give the values as per the database created in step 3 or whatever you have provided while installing. After giving the values press Test your database connection now. It will check the connectivity, after successful connection press *Next*.

STEP 8: It will initiate the installation. The screenshot shows the successful PrestaShop installation.

STEP 9: Next, we need to remove the installation folder to proceed further, as follows:

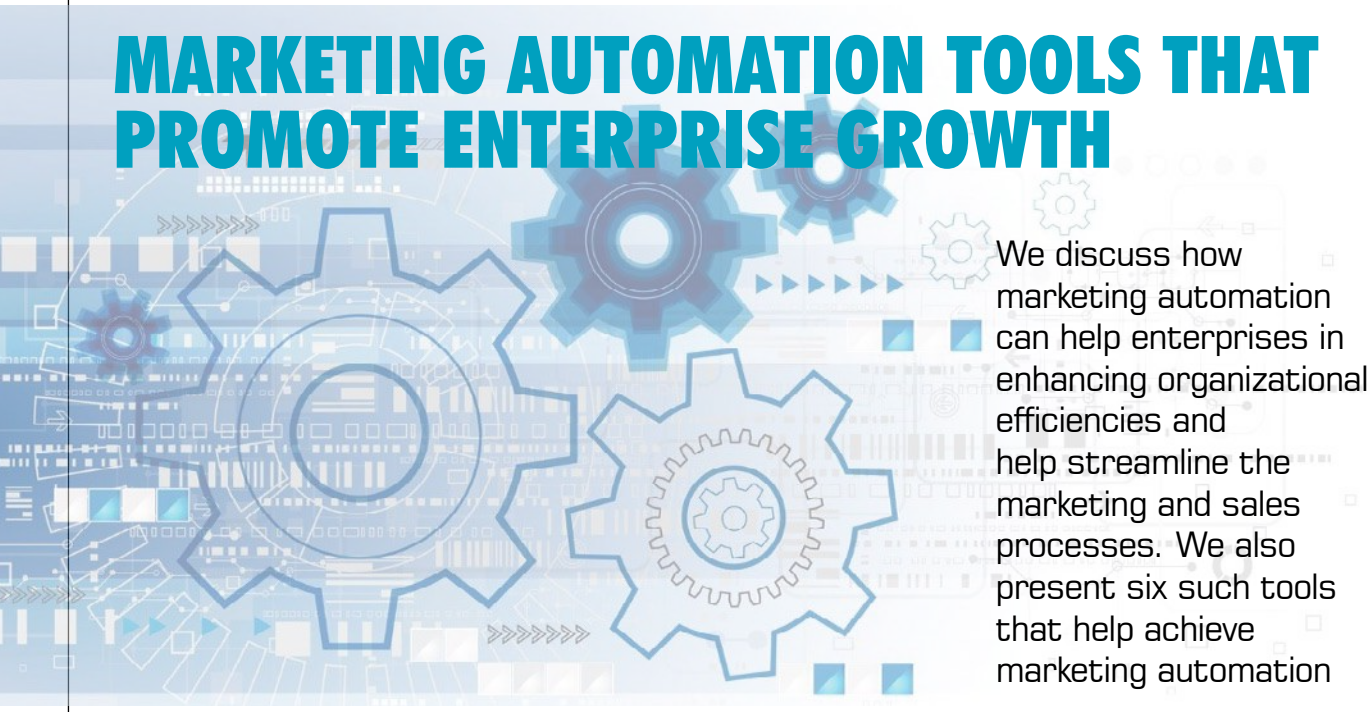
```
rm -r /var/www/html/prestashop/install/
```

STEP 10: We can access the backend admin page of PrestaShop at URL http://192.168.5.119/prestashop/admin4755y8m0m/index.php. Please check your admin name in PrestaShop folder at /var/www/html/prestashop/ directory as in my case it is "admin4755-y8m0m". Once you open admin page, put the credentials as selected at the time of installation.

STEP 11: After login, it will show your default welcome screen or dashboard.

STEP 12: Now, we are ready for the frontend. We can access it at *http://192.168.5.119/prestashop/index.php*. □

MARKETING AUTOMATION TOOLS THAT PROMOTE ENTERPRISE GROWTH



We discuss how marketing automation can help enterprises in enhancing organizational efficiencies and help streamline the marketing and sales processes. We also present six such tools that help achieve marketing automation

- Sidharth Shekhar

Marketing automation despite the complexity has been adopted rapidly by enterprises. The benefits are numerous with improved lead management as well as email and campaign management. By mastering these functions enterprises can enhance efficiencies and help streamline the marketing and sales process. Finally, once marketing automation systems are implemented and integrated into CRM platforms, measurable results and insights about how to engage with prospects and customers follow.

Here are six reasons why companies must consider looking into marketing automation to grow their businesses.

Productivity

Marketing automation simplifies organizational and marketing tasks. It eliminates repetitive manual processes by substituting automated solutions. This, in turn, increases productivity as marketing department personnel can focus on tasks that require stringent manual monitoring.

Automated workflow

A successful inbound marketing campaign requires forms, calls-to-action (CTAs), and conversion pages, and thanks to the automated workflows that binds all of them together.

Marketing automation systemizes activities, processes, and documentation, allowing for a smoother marketing workflow. The more advanced software platforms also provide automation of internal marketing processes such as budgeting and planning, approval, workplace collaboration, and other related processes.

Channel agnosticism

Marketing automation tools can be used in different marketing platforms that include email, SEO, CRM tools, and social media. The platform also serves as a centralized hub for a variety of marketing activities thereby making the marketing professional's job a lot easier.

Customer retention

Marketing intelligence is one effective tool in retaining customers. It provides relevant insight into customer intent. With this information companies can "predict" customer needs and decisions, enabling them to act accordingly without any waste of time.

Relationship marketing

Relationship marketing is a form of marketing with high focus on achieving customer satisfaction. Customers' relationships with a brand entail repeat sales and word-of-mouth promotion, which, in itself, is a powerful marketing tool.

With marketing automation tools enterprises can personalize their relationships with every customer and every lead through relevant strategies that include lead qualification, nurturing, trigger campaigns, digital footprint analysis and sales and marketing alignment.

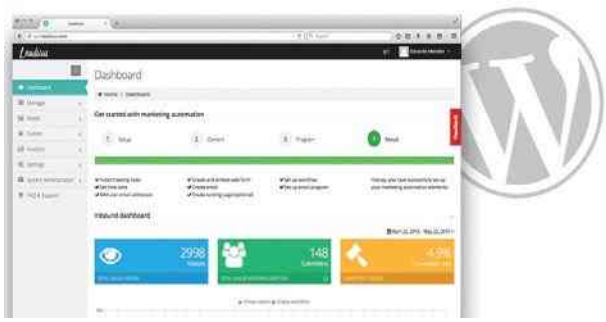
Tracking and monitoring marketing campaigns

The success of any marketing campaign depends on measurable data which is used to prepare precise tracking and monitoring. Marketing automation software not only helps in tracking marketing expenditures but also in monitoring responses to marketing campaigns based on specific parameters to determine success or failure.

To help achieve marketing automation, we present top 6 open source marketing automation tools that are free and provide the same functionality as their paid counterparts.

Leadsius

It is perfect for small businesses and offers one of the most robust marketing automation systems for free.



Features included in free version are:

- 2,500 contacts, Single user
- Form and landing page creator (unlimited), Email creator and templates
- List management (static only), Reporting – emails, forms, web analytics
- Support – knowledge base and community support

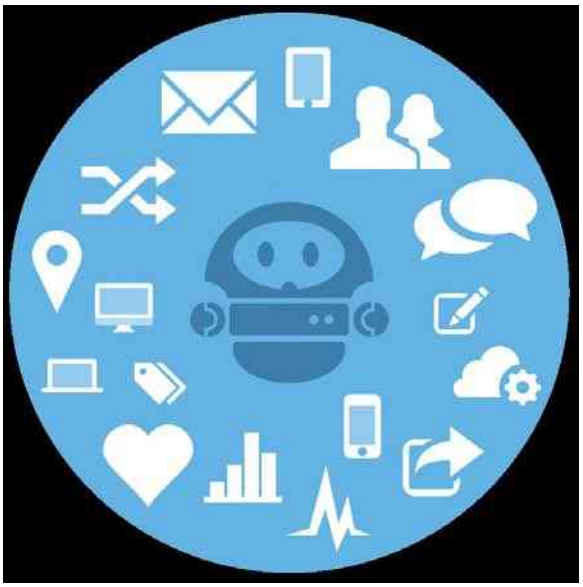
If you need more contacts, users, or advanced marketing automation functionality then you can always upgrade to one of the paid versions which start at $295 per month.

Jumplead

With Jumplead you can explore and learn for free. Starting with their free version, you can get a taste for what their marketing automation solution can do for your business.

Features included in free version:

- 200 contacts, 200 website visitors

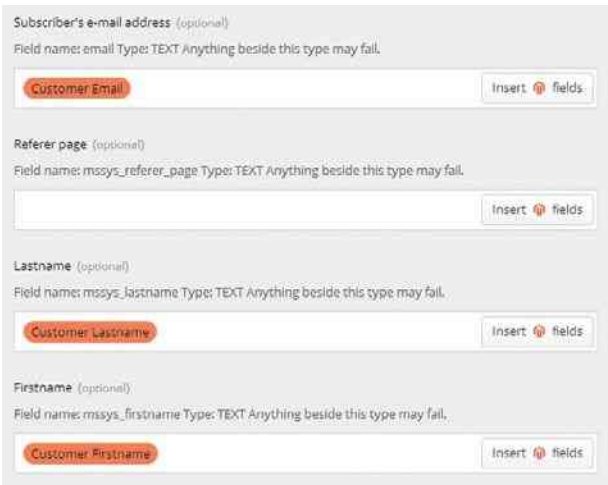


- 100 emails, 1 SEO keyword
- Single user

Jumplead is really effective for small-scale campaigns. Go solo with just $49/month upgrade for the first paid level.

SalesAutoPilot

There are two free packages from SalesAutoPilot: Free and Starter. The biggest difference between the two is that the Starter package allows you to purchase add-ons, like extra emails and users; the Free version does not.



Features included in Free/Starter versions:

- 400 emails, single user
- Email and sales automation (event-triggered actions, landing pages, A/B testing)
- E-commerce module

- Text message sending, personalized PDFs, telemarketing support
- Sales CRM module
- Affiliate module
- Helpdesk module

The Pro level of SalesAutoPilot starts at $19/month. This marketing automation system depends a lot on the various extras you can add to your account.

InTouch

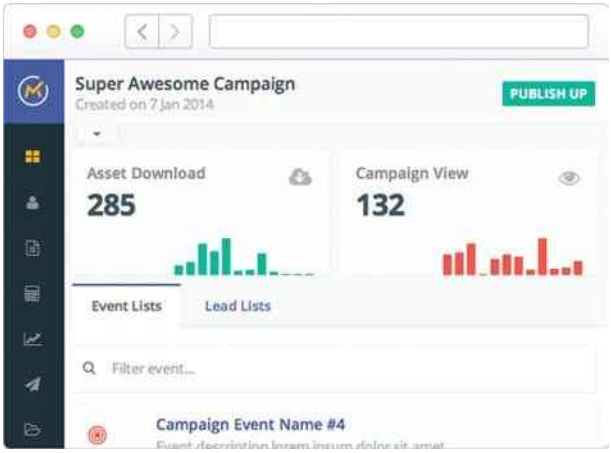
InTouch provides simple sales CRM and marketing automation for small business growth. The free version is just an option for businesses to explore the possibilities of marketing automation. However, with unlimited contacts (rare for marketing automation systems) it provides a great opportunity to test a campaign or two to see if your business could benefit from marketing automation.

Features included in the free version:

- 100 emails
- 2 users
- 1 custom field
- 1 web form
- Unlimited contacts
- Unlimited organizations
- Email marketing

Mautic

An open source solution, Mautic's marketing automation system is fully customizable for your particular needs and situations. You can download it straight from their website and get started right away.



Features include:

- Monitor leads
- Create emails and build lists
- Landing pages
- Lead nurturing
- Reports

Mautic also has a community for its users to get involved with the product's development.

ORBTR

ORBTR is a marketing automation system for IT and technology firms. It offers two versions of its WordPress native product: Ping and Connect. Ping, referred to as a plug-in, is free.

Features included in Ping:

- Email alerts for new and returning leads to your site
- Integrates with Gravity Forms, Jetpack Forms, and WordPress Comments for lead identification
- Track leads who click through email campaigns. □

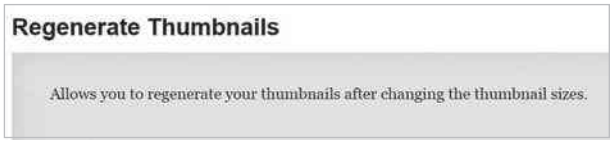
6 PLUGINS THAT HELP SOLVE IMAGE PROBLEMS IN WORDPRESS

You can solve your WordPress issues related to image size or change the dimensions of thumbnail images in bulk by using these free plugins

– Raj Kumar Maurya

Regenerate Thumbnails

It fixes the most common error that many of us have been facing while changing from one theme to another. The plugin helps the images to resize according to the specifications of the new theme. This is very handy if you've changed any of your thumbnail dimensions (via Settings -> Media) after previously uploading them.



Easy Featured Images

It allows you to assign featured images to posts much more efficiently, especially if you have a number of posts to go through. Normally you have to visit the edit page of each post, launch the media window and upload/assign the image. With this plugin, you can do this from the post list screen. Everything works via AJAX so images are assigned instantly, without having to wait for pages to load.

Required Feature Image

If you have a new website on WordPress or have multiple writers, it is very hard to remember for new writers and even for a veteran, the exact size of the featured image that your website supports. If a lack of featured images causes your layout to break, or just look less-than-optimal, this is the plugin for you. Rather than forcing you to manually enforce your editorial standards of including a featured image in every post, if your contributors fail to add a featured image to a post before publishing it they'll simply find it impossible to publish.

Auto Post Thumbnail

Auto post thumbnail is a plugin to generate post thumbnail from the first image in a post or any custom post type. If the first image doesn't work it will automatically search for the next one and so on until the post thumbnail is inserted. If the post thumbnail is already present, the plugin will do nothing. The plugin also provides a Batch Processing capability to generate post thumbnails for already published posts.

Multiple Post Thumbnails

Multiple Post Thumbnails enables you to use two post thumbnails instead of one. This plug-in do require some coding experience to make it work. If you don't know anything about coding, you can search online for that.

Featured Images in RSS w/ Size and Position

Well, this is a plugin that can easily add featured images to your RSS feed. The Featured images in RSS w/ Size and Position can easily handle the different type of size and position for your featured image. Custom sizes are also supported by the plugin and it works with Chimpfeedr, Feedburner, and MailChimp. □

8 Ways IT is Empowering Teachers

From interactive websites to learning videos, interactive white boards to online behavior monitoring systems, and even digital story telling, the world of IT has many useful tools that can empower teachers and enhance the quality of education they impart

– Sonal Desai, CIOL

Guru Brahma Gurur Vishnu
Guru Devo Maheshwaraha
Guru Saakshat Para Brahma
Tasmai Sree Gurudev Namaha

Meaning: The Guru is verily the representative Of Brahma, Vishnu and Shiva. He creates, sustains knowledge and destroys the weeds of ignorance. I salute such a Guru.

Now consider this: Vendors and start-ups that have been unleashing numerous solutions targeted at the education segment are chiefly looking at the entire campus or students as primary audience.

However, the guru or the teacher who is at the forefront of developing a child into a wholesome individual is often neglected.

Thankfully, IT has a lot of tools that can empower teachers considerably. Here are 8 of them, listed randomly. Our goal is to enable our teachers to not only use technology effectively, but also enhance student engagement.

1) Interactive websites

Interactive websites are emerging as a vital tools for reference for teachers and students alike. Many a websites have mushroomed with customized content aimed at helping teachers simplify academic concepts like phonics, Math, science and reading skills.

Additionally teachers can leverage educational video sites to access instead of searching VHS or DVDs in their school library. For instance, TeacherTube, a media site similar to YouTube enables teachers to share instructional materials such as videos, audio recordings, and photographs.

Video learning: In a recent global survey of 60 educational institutes, more than 82 percent of respondents say that video helps students to achieve

better learning outcomes, and 91 percent believe that video enhances the learning experience. Interestingly, two thirds of those surveyed state that their institutions already incorporate video in student assignments.

CampusKnot, the campus networking website is yet another tool that allows users to chat, share notes, check class schedules, post questions, buy and sell books.

The website replaces the popular social media which many teachers across the world are using at present to connect with the students and share the educational content in the absence of any other appropriate platform.

2) Applications

In lieu of the fact that many state governments and municipal corporations are introducing tablets for secondary and higher secondary schools in India, it is imperative for teachers to use niche applications which feature content based on the student's age, grade level and subject matter.

3) E-books

Teachers can take advantage of the many sites featuring popular online books such as Disney Digital Books, TumbleBooks, and We Give Books. Storyline Online, a special site run by the Screen Actors' Guild Foundation shares videos of famous actors and actresses reading well-known children's books.

4) Interactive whiteboards

Electronic touch boards allow teachers and students to manipulate items on a large screen by using electronic pens, bringing a new level of interactivity to classroom instruction.

Teachers can also create their own lessons and broadcast media from the Internet, including academic videos or clips.

5) Online behavior monitoring system

Behavior management software can help teachers manage their classrooms online.

For instance, Class Dojo allows teachers to award points to students for participating, helping others, exercising creativity, showing great insight, working hard, and making a good presentation. The software can be accessed from a tablet or smart phone, in addition to the teacher's school computer.

"Google Earth is an effective tool in the hands of a teacher who desires to teach his computer students that love making hands-on inquiries."

6) Assessments and evaluation

ThinkCERCA helps teachers create reading assignments that push their students' critical thinking skills.

Teachers can evaluate their students' work and assign content to help students with areas where they need to improve in the tool itself.

Another example is Fine Tune which is designed to help teachers evaluate their students' writing assignments. The idea is to let teachers rate sample essays and then give them feedback by comparing their ratings with the ratings given by a panel of experienced teachers.

BloomBoard is one more interesting example of the intersection between teacher feedback and professional development. It's a repository where administrators can write classroom observations and then connect teachers with resources to help them improve, including videos of really effective educators.

Additionally, teachers can create their own groups and hold real-time chats about their work. Schools can even analyze their spending on professional development.

7) Google Earth

Some of the activities that teachers can do with this app include exploring the sky, flying to any destination in the world, touring 3D buildings as well as terrain, viewing any street regardless of its location, recording tours, geo-tagging photos, searching for places, learning navigation, embarking on tours as well as drawing and measuring.

Google Earth is an effective tool in the hands of a teacher who desires to teach his computer students that love making hands-on inquiries. In fact, more teachers are using the app as the foundation for the homework assignments that they give to their students. Some teachers are creatively using the app to make dynamic presentations during the lectures/lessons.

8) Digital storytelling

Sway, the digital storytelling app recently joined the Office suite and has become an effective way for teachers and students to collaborate and produce work that lives on the web. From class projects to personal portfolios, teachers can help students utilize Sway as a new and easy to use expressive platform.

Snip yet another Microsoft tool is a beefed up screen capturing tool that allows users to add sketches, voice notation and share them via website embeds or emails. Snip helps teachers and students quickly communicate and share information across devices and the Internet.

While none can replace the hard work and efforts teachers put-in, we do hope that these tools will help them reach out to the tech-hungry gennex in a better way. □

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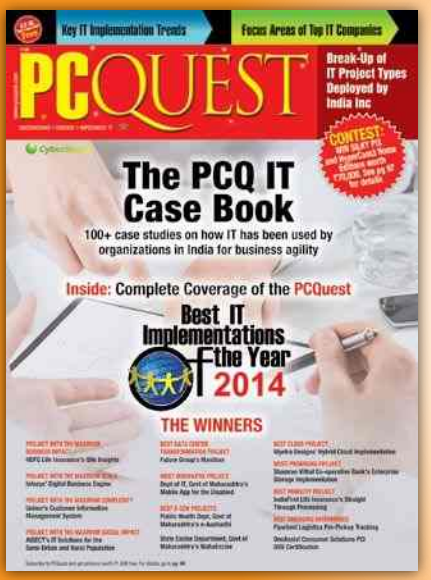

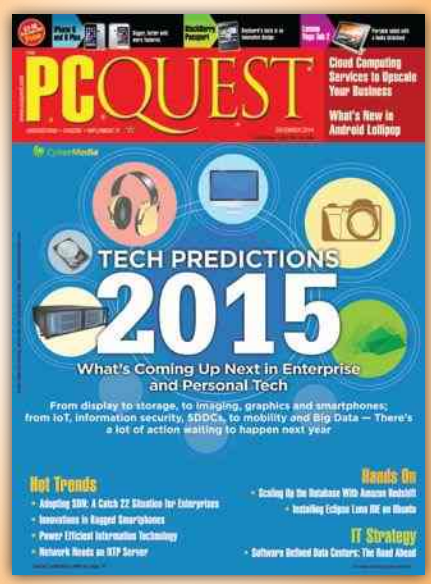

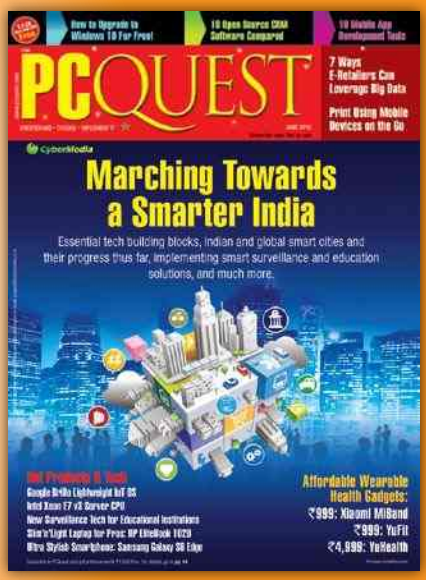

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TOP 20 NETWORK MONITORING AND ANALYSIS TOOLS FOR SYSTEM ADMINS

1. Microsoft Network Monitor, 2. Nagios, 3. OpenNMS, 4. Advanced IP Scanner, 5. Capsa Free, 6. Fiddler, 7. NetworkMiner, 8. Pandora FMS, 9. Zenoss Core 10. PRTG Network Monitor Freeware, 11. The Dude, 12 Splunk, 13. Angry IP Scanner 14. Icinga 2, 15. Total Network Monitor, 16. NetXMS, 17. Xymon, 18. WirelessNetView 19. Xirrus Wi-Fi Inspector, 20. WireShark

8 FREE AND OPEN SOURCE BANDWIDTH MONITORING TOOLS

1. Solarwinds: Solarwinds Real-Time Bandwidth Monitor polls your interface a
every half second and reports real-time bandwidth usage on an e
graph. Set critical and warning thresholds to instantl
of bounds.

2. Bandwidth Monitor: Bandwi
as well as upload speeds both in
forms, registers bandwidth usage,
monthly, and daily bandwidth usage

3. NetWorx: This is free and simple,
assists you to evaluate objectively the
bandwidth. You may use Network to ga
bandwidth usage and measure your int
or other connections in the network.

4. Cacti: It stores all of the necessary info
to create graphs and populate them with d
MySQL database. The frontend is complete
driven. Along with being able to maintain Gra
Data Sources, and Round Robin Archives in a
database, Cacti handles the data gathering.

5.BandwidthD: Open source BandwidthD track
usage of TCP/IP network subnets and builds HTM
files with graphs to display utilization. Charts are
by individual IP.

6. PRTG Network Monitor: PRTG Network Monitor
on a Windows machine within your network, collecti
various statistics from the machines, software, and d
which you designate.

7. Sarg: Squid Analysis Report Generator is a tool that a
to view "where" your users are going to on the Internet.
HTML reports, with information's about users, IP Addresse
and times.

8. Internet Bandwidth Monitor(IBM): This is a simple soft
usage of any network adapter.

5 FREE AND FULL GAMES

1. SPOILER ALERT: Unraveling this mystery takes you through the entire game, from the last level to the first. You must uncollect the coins, revive the enemies and avoid nasty time paradoxes. In other words, you must uncomplete the game by playing it backwards.

2. WIZARDS SPELL: The Wizard has embarked upon a dark and anguished path of misery and destruction, ruining lives as he rages through the countryside. Your skills as an Alchemist will certainly be invaluable, but there are other reasons the Sorcerer's Council has sent you to find and stop the Wizard.

3. STAR RACING: It's time to speed amongst the stars and planets in this one-of-kind ra nge. This isn't your average racetrack, but a floa t looks more like the rings of Saturn s, arcing comets, nebulas and a ir rubber-mark on the twisting and

Defense, players have to wers along the enemy supply lines f their kitchen table. In order to g ground and air units, players small budget to purchase and ir towers.

ERY OF MORTLAKE MANSION: the dark rooms of the house scover the secrets that this eerie place. Meet the ng raven and the Spirit, enigmatic captives of mansion. Confront the dious lord, break the evil lls, set the captives free become the owner of gorgeous mansion.

5 PRODUCTIVITY TOOLS

1. Toggl: Toggl is a simple time tracker tool to calculates the time taken to complete various tasks. Time entries and active timers are synchronized in real-time via a cloud service to the web site and various applications.

2. Rescue Time: Rescue Time is designed on the similar fashion as Toggl, but comes with more advanced features. It can be installed on your computer and will track what programs and websites you spend the most time on.

3. Evernote: Evernote is one of the popular cross-platform note-taking services, allowing users to take and upload notes, pictures, audio and video snippets and organize them into cloud notebooks that can be synced across different devices.

4. Skype: Skype is a handy communication tool that offers free instant messaging, video and voice calls, and file sharing. Its paid features include mobile and landline calls, text messaging and access to Skype Wi-Fi public hotspots. It's a great, low-cost option that facilitates communication and collaboration with team members.

5. Microsoft Dynamics CRM: It is a customer relationship management software package developed by Microsoft. It provides social insights, business intelligence, and productivity with One Microsoft solutions. It is part of the Microsoft Dynamics family of business applications.

FIREWALLS

1. Endian Firewall
2. PfSense
3. Untangle Gateway
4. IPCop
5. ModSecurity

LATEST LINUX DISTROS

1.Ubuntu 15.10: The Ubuntu 15.0 supports PCs, Laptops, and mobile devices as well. This comes with the latest developer tools and fresh desktop interface. For 'makers', Ubuntu Make now has support for more platforms – now 20 versus 14 in 15.04.

2. Korora: Korora is a Fedora Remix that aims to make Linux easier for new users, while still being useful for experts. Korora was born out of a desire to make Linux easier for new users, while still being useful for experts. The main goal of Korora is to provide a complete, easy-to-use system for general computing.

HOW TO CHOOSE THE RIGHT SMARTPHONE WITHIN YOUR BUDGET

The smartphone industry has developed and progressed dramatically since the days when the display in your mobile phone was required only to show the number of the person calling. Let's look at the latest developments and the key parameters to keep in mind while choosing a smartphone these days

— Anuj Sharma

With the progression of the smartphone industry, gradually more features are continuously being added/upgraded to do multilple tasks, such as to view emails, click and record photos and videos, etc. And with added features there is always a question as to which smart phone should one buy and for what price. There are several aspects to consider while choosing a smart phone. Here's what you should look out for, based on our experience of reviewing phones over the past six months or so.

The Ideal Screen Size

Nowadays mostly all manufacturers are targeting bigger screen sizes and this has become a key trend. The bigger screen is helpful in all aspects of mobile usage; be it playing games, watching videos, typing messages, video chats or using social sites. We can broadly categorize the screen size in three formats:

Between 3 to 4.4 inches

- Compact design thus is easy to carry in pocket
- Can be easily used with one hand without stretching your thumb
- Great for checking mails
- Key models: Apple iPhone 5S, Samsung Galaxy Star Pro, BlackBerry Z10 etc.

Between 4.5 to 5.4 Inches

- Can be used for all purposes like watching videos, playing games
- Good battery life
- Fairly comfortable to use with one hand, depending on the button placement.
- Examples: iPhone 6, HTC One M9, Galaxy S6, etc. Budget phones like Lenovo A6000 Plus, Redmi 2, Micromax Canvas Xpress 2 also fall under this category.

Screen Size 5.5 Inches or More

- Great for multimedia consumption
- Great for reading ebooks due to larger screen size
- Requires two hand operation
- Allows to run two apps simultaneously
- Larger battery life
- Examples: iPhone 6 Plus and LG G4, and the 5.7-inch Galaxy Note 4.

Display Quality

The display of a smart phone is one of the most important aspect to consider when buying a new device because it's the part where you'll spend the most time directly interacting with the phone. The smartphone industry rotates around various names to describe the viewing experience on your smartphone screen viz. IPS, LCD, LED, Retina, AMOLED etc. Let's find out what is meant by each of these terms and how they are different from others.

Also do check for protective coating on screens like Gorilla Glass that prevents breaking your smartphone screen from accidental drops or Anti-Scratch Resistant/Fingerprint coating that protects the screen from scratches or fingerprint smudges.

LCD Display

An LCD panel uses light modulating properties of liquid crystals. These liquid crystals don't emit light of their own thus a backlight is required to generate light. A grid of IC is used to control each pixel by applying electric charge to them. Colors are created using red, blue and green subpixels and are then blended by various degrees to produce different combination of colors.

- LCD panels produce a wider color gamut due to blending of primary colors but wider range is not better all the time as it can produce oversaturated images and images can also look distorted at times.
- LCD screens produce realistic colors but do not offer as wide a contrast ratio as AMOLED screens.
- LCD panels do not produce deep or clear blacks.

TFT-LCD Display

A thin-film-transistor liquid-crystal display (TFT LCD) is a variant of a liquid-crystal display (LCD) that utilizes thin-film transistor (TFT) technology to enhance image qualities such as addressability and contrast.

- Most common type of display used in budget smart phones and also comes in some good tablets and phones.
- The TFT-LCD display has narrow viewing angles and also if you look at them from the center it can be hard to see what's on the display.
- You will also have poor visibility in direct sunlight.
- Color richness is dull.

IPS (In-Plane Switching) Display

IPS is a screen technology used for LCD displays and is a marked improvement over TFT-LCD panels. In-plane switching includes organizing and switching the molecules of the liquid crystal (LC) layer between the glass substrates and the movement of these molecules is in parallel instead of perpendicular.

- IPS displays wider viewing angles and good color reproduction.
- IPS panel display consistent, more accurate colors from almost all viewing angles.
- IPS displays are costlier than TFT-LCD and are most common in High-end smart phones.
- One of the disadvantage of IPS panels is they consume more power.

AMOLED Display

An AMOLED display consists of an active matrix of OLED pixels in order to produce light (luminescence) upon electrical activation that have been incorporated in a thin-film-transistor (TFT) array, which functions as a series of switches to control the current flowing to each individual pixel.

- AMOLED displays deliver higher refresh rates and consume less power
- AMOLED screens have brilliant color reproduction, higher brightness levels and good contrast ratio.
- Also since the light in the display screen comes from individual pixels instead of being produced from a backlight, thus to create a black color, relevant pixels are dimmed off or turned off giving deep black.

Super AMOLED

Super AMOLED is Samsung's defintion for an AMOLED display and uses Samsung's PenTile matrix Layout.

- Color gamut is high, images are much more granular, clear and sharp in Super AMOLED and color richness is higher than LCD panels.
- Easy to view in direct sunlight.
- Super AMOLED screens have battery saving efficiencies.

Retina Display

Retina Display is a term used by Apple for screens that have a pixel density high enough that the human eye is incapable to identify individual pixels at a typical viewing distance. The term is specifically used for several Apple products including iPhones, iPads, MacBooks etc.

- Retina display screens are good, sharp, colorful and bright.
- These have wide, sharper viewing angles and colors are much more vivid and vibrant and the Apple's Retina display is hard to beat in terms of pixel density and resolution.

When buying a phone, the screen will always be a factor, but it isn't going to be the only deciding factor. The ideal option must depend on what you will use your screen for. If you want to watch movies, play games AMOLED will be a better choice giving higher contrast ratio, and rich colors. On the other hand if web surfing, document viewing is more important to you than LCDs and Retina Displays will be more preferable offering crisper texts and making it easier to read on screen for long periods.

Camera Quality

If you're looking for a good camera phone, don't go blindly for the idea that more megapixels will give you better pictures or by promotion like best camera phone or best selfie phone. Instead, look for phones that pack good camera optics like aperture, speed and other relevant features.

- If you want to capture decent shot indoors without using the flash look for a larger aperture. For instance, the Galaxy S6 has an f/1.9 aperture and the LG G4 is rated for f/1.8, while the iPhone 6 is f/2.2. A lower number means a larger aperture, which typically translates to better low-light performance.
- Look for optical image stabilization to reduce blur and improve low-light performance.
- If you want to capture long distant objects clearly, look for higher optical zoom.
- For shooting in low light look for dual tone LED flashlight for good low light images, some smartphone have front LED flashlight.
- The Panorama feature is useful when you are mostly out on vacation and want to capture a wide angle view.

Good photos are a result of adequate megapixels, good lens and sensor technology, as well as high-end processor chipsets. The smartphones like OnePlus 2,Nokia Lumia 1520, the Apple iPhones, Samsung Galaxy S6 Edge, LG G4, Honor 6 Plus, ZTE Nubia Z9 Mini, Sony Xperia Z3 and Xiaomi Mi 4i have a good camera.

Operating Systems

The most popular OSes are Google's Android, Apple's iOS, Microsoft's Windows Phone OS, and Blackberry OS.

Benefits of Android

- Most popular OS and is available on a wide price range of smartphones.
- It is an open OS, which means it's easy to customize with widgets, launchers, your choice of keyboard and more.
- Many more choices than iOS or Windows Phone when it comes to design, display size, specs, capabilities and price.

Benefits of iOS

- The biggest reason to opt for an iOS device is its selection of apps. Apple's App Store tends to get the hottest apps and games before Android, partly because developers have an easier time targeting a smaller set of devices that have similar specs.
- Family Sharing lets up to six people in your family share iTunes, books and app purchases.
- iPhone users enjoy the broadest array of accessories, because there's less variation in design from one model to the next.

Benefits of Windows Phone

- Offers some compelling features on its own, such as a dynamic Start screen and the Cortana digital assistant, but they haven't been enough to sway shoppers.
- Only available on select number of devices, mainly on Lumia phones.

Benefits of BlackBerry OS

- There's a BlackBerry Hub that aggregates everything from email to social updates in one place.

- It's also fairly easy to multitask on these phones, and you can get a physical keyboard from the BlackBerry Classic.
- The UI is not intuitive, and the app selection is pretty skimpy.

Role Of CPU and GPU

Before choosing a smartphone, look for following specs for a hassle free experience

CPU Speed

- The CPU speed for most of the phones fall into 1-1.3 GHz and 1.5GHz for high end smart phones.
- Higher number of cores like Quad Core or Octa core ensures better performance than dual core ones.
- Look for dual core if you want to perform basic functionalities, casual gaming etc.
- If you want to consume more Full HD videos, want rich multitasking then preferred choice should be Quad Core.
- If you want to perform high end gaming and tasks without the CPU coming to a crawl then go for Octa Core Processors with Mali or Adreno GPU.

RAM

The RAM in a smart phone is closely associated as to how its performance would be. The speed of RAM is measured in terms of MHz generally and they are classified as LP DDR1 < LP DDR2 < LP DDR3, etc. in order of their capabilities. Now a day's smart phone manufacturers use DDR3 for enhanced performance.

- Having more RAM gives you freedom for switching between apps or frequently used app and more RAM results into better multitasking.
- If you want to play heavy graphics intensive games like Asphalt 8 or Dead Trigger you should choose at least 2 GB of RAM for good performance. Some low budget smartphones with 1 GB RAM are also capable of running these games and some of them have 2 GB RAM but are still not capable of giving lag free operations.
- Smartphones running on Android OS need updates frequently on several apps or the OS. In such devices even 2GB RAM is less. Here Apple's iOS is better because the OS update is not frequent.

Role of Internal Storage

Go for as much internal storage as possible. We have games that takes around a 1 GB or more of space like Asphalt 8 and Dead trigger 2 that requires having 500 MB of space. The minimum on most handsets, like the iPhone 6, is 16GB, but more phones (such as the Galaxy S6) are coming standard with 32GB or OnePlus 2 with 64 GB. We recommend 16 GB or more.

A microSD card can help expand your storage. It's available on phones such as the HTC One M9 and LG G4, ASUS Zenfone 2 Deluxe, but keep in mind that microSD can often store only a portion of apps. These cards are better for storing media. Flagship phones like Samsung Galaxy Edge, iPhones, OnePlus 2 don't have microSD card slot.

Do you really need a 4G smartphone?

LTE stands for Long Term Evolution, which is the "new" generation of faster data connectivity for both GSM and CDMA technologies. Often referred to as 4G or 4G LTE, it's the speediest data throughput you can get right now. LTE Advanced, a step beyond LTE gives data speeds still another boost, and is rolling out in bits and pieces. Now a days from Micromax to Apple many phones have 4G ready. Although we recommend 4 G ready phones but still 3G phones are not bad.

Battery

While smartphones are growing more advanced and are becoming as powerful as laptops but with high-definition screens and professional camera technology they're still limited by power.

- Measured in mAH, go for higher numbers to give you more talktime, and enough juice to run your music and videos
- Some smartphones are also equipped to run on Low Power Mode where battery is about to get fully depleted and can still run for hours which can be useful when you are out travelling and want to get hooked on remaining battery in case of emergency.

HOW WE TESTED

To get the real live feel of the smartphones we received for the shootout, we subjected them to both real-live usage as well as synthetic benchmarks. For real-live usage, we used them as our primary device for over a week. Our usage varied depending upon the smartphone's price bracket.

So for budget smartphones, we performed light to medium tasks like watching movies, listening to music, web surfing, and using mobile office apps like Word and Excel, among others.

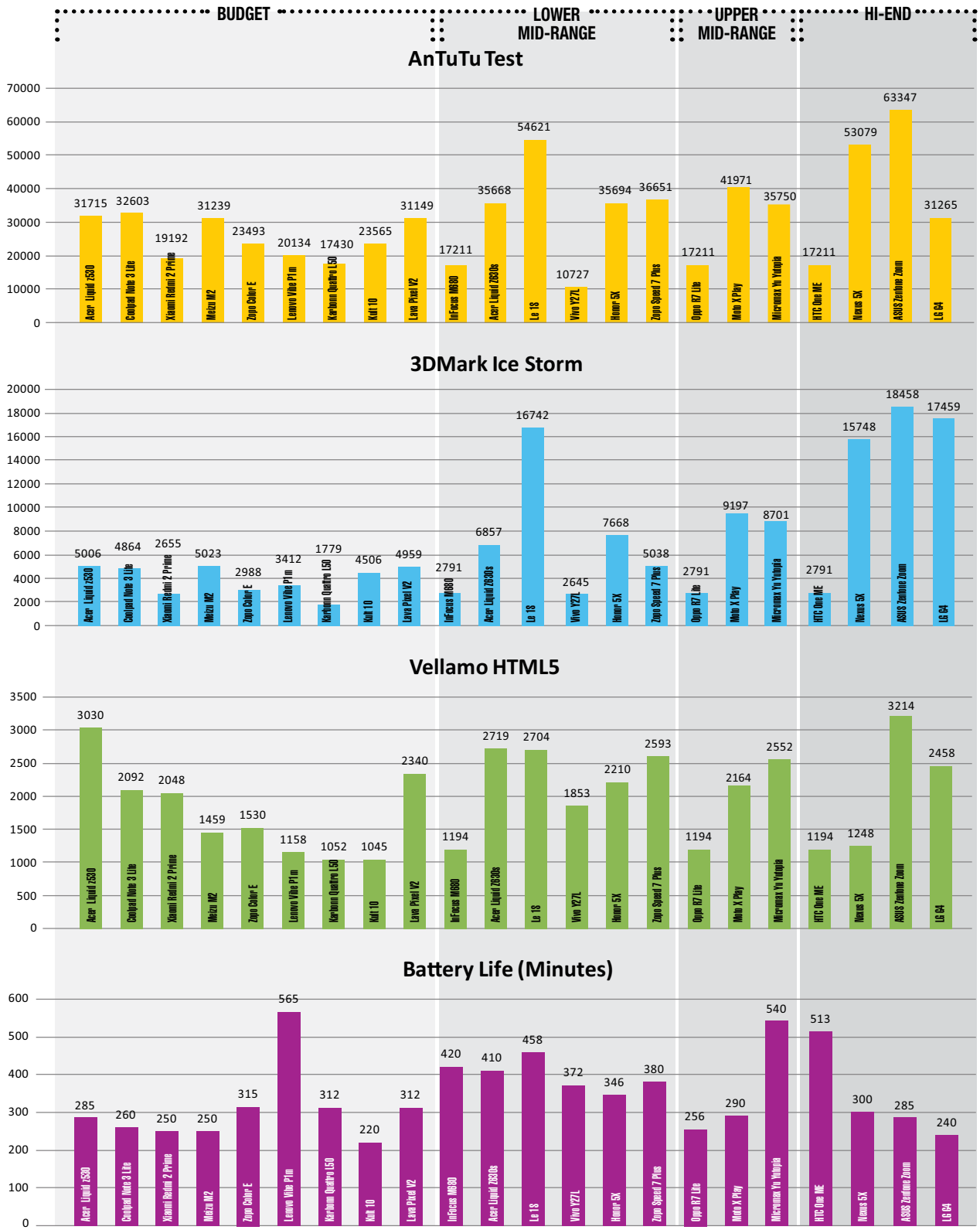
For mid range and high end smartphones we played games like Gods of Rome, Asphalt 8, Fifa 16. Apart from these we also ran mix of basic productivity and social networking apps like Word, Instagram, Twitter. We switch between the apps to check if they surface any performance lag.

We also compared the smartphones over features like display resolution, screen size, connectivity and ports, internal/external storage, weight, battery power.

For synthetic benchmarks, we used 3DMark Ice Storm, Quadarant, Antutu, and Vellamo.

We compared all smartphones on our three-axis model of performance, price, and features, and used the Brown-Gibson model to arrive at the weightages and scores.

PERFORMANCE RESULTS



In all benchmarks, higher score means better performance

COOLPAD NOTE 3 LITE

This cool smartphone comes with a fingerprint scanner and 3 GB RAM, all at a great price

Price: ₹6,999

SCORE*

PRICE: **10/10**
PERFORMANCE: **7.6/10**
FEATURES: **8.3/10**

Overall: 8.7/10

Coolpad Note 3 Lite is first Make In India smartphone from Coolpad. It features a fingerprint sensor with the same Golden finish, located at the back of the phone and supports 360 degrees finger rotation capability, fast response time and has 165 degree curved form factor for easy single hand usage.

The 5 inch HD IPS panel offers good colors, contrast ratios. The In-Plane Switching technology delivers good color reproduction and wide viewing angles. However the outdoor visibility is low.

The CoolPad Note 3 Lite runs on Android Lollipop 5.1 with Coolpad UI 6.0 as of now but will be updated to Android Marshmallow in the near future. The Coolpad UI 6.0 is clean and it does pack some interesting customizations. The finger print scanner works brilliantly and unlocks the device in less than 0.5 seconds.

The 13MP rear shooter is great for capturing in bright sunlight, has good shutter speed like Note 3 and also works well under low light conditions as compared to Lenovo Vibe P1M's low light shoots. The 5MP front camera is good for selfie lovers and clicks good pictures. The comes with 2500 mAh battery that lasted for 4 hours 20 minutes in our video test, playing video over wi-fi with full brightness and sound.

Bottomline: The Coolpad Note 3 Lite packs good display, good performance and a brilliant finger print sensor and is an excellent choice for users who are on a tight budget.

KEY SPECS:
5.0 inch HD screen, 3GB RAM, 1.3 GHz Quad Core Processor, Android 5.1 Lollipop, 16GB in built storage(expandable upto 64GB), 4G LTE, 13MP rear camera with LED flash, 5MP front-facing camera

PROS:
Quick fingerprint scanner, good performance

CONS:
Slight delay in opening some apps

WRITE TO:
Coolpad Communications
Ph: 1800-1027-159

ACER LIQUID Z530

With solid build quality and a nifty UI, this smartphone looks good and performs well, meeting the needs of budget smartphone buyers

Price: ₹6,999

SCORE*

PRICE: **10/10**
PERFORMANCE: **8.2/10**
FEATURES: **7.4/10**

Overall: 8.5/10

Acer Liquid Z530 is similar to Liquid Z630s in terms of build quality and looks. It is built with durable plastic. The front features a plane design with round speaker gaze. The rear cover gets brushed metallic finish.

The 5-inch HD IPS LCD touchscreen offers good viewing angles and 1280X720p resolution. Though it has good viewing angles, but is not wide enough meaning you can't share the screen with your friends and family.

The affordable Acer smartphone is equipped with quad-core 1.3GHz MediaTek MT6735 processor, 2 GB RAM, 16 GB ROM and runs on Android 5.1 with updated Acer Liquid UI on the top of it. While testing the device we didn't see any performance lag in the phone. We played some games on it as well as other activities like web browsing, and it worked very smoothly.

It is equipped with 8 MP camera at both ends front and rear as like Z630s. Using the rear camera, you can capture quality images in both low and bright light conditions with good detail and decent flavor of colors but less sharpening was visible in the low light shots.

The smartphone packs 2,420 mAh battery that lasted for 6 hours 45 minutes in our video test, playing video over wi-fi with full brightness and sound. Also, the speaker quality of the phone is average.

Bottomline: Acer Liquid Z530 is a low-budget smartphone packed with a powerful combination of hardware. With a good build quality, this is the right choice for people looking for a smartphone under the budget.

KEY SPECS:
1.3GHz quad-core MediaTek MT6735 CPU, 2 GB RAM, 16 GB ROM, 5-inch HD (1280x720p) screen, Android 5.1, 8 Megapixel Rear and Front Camera

PROS:
Build quality, nifty UI, performance, front camera

CONS:
Speakers

WRITE TO:
Acer India, Noida
Ph: 0120-3807200

** All scores are relative to the top scorer in their respective categories.*

LENOVO VIBE P1M

Equipped with a whopping 4000 mAh battery and P2i nano-coating, this is a long lasting, splash & dust resistant smartphone

Price: ₹7,999

SCORE*

PRICE: **9**/10
PERFORMANCE: **7.6**/10
FEATURES: **7.8**/10

Overall: 8.1/10

P1M has a 5" screen along with a metallic frame and a classy matte-finish back. The IPS LCD screen with pixel density of 294 ppi delivers good color reproduction. Browsing the web, watching videos, playing games all look beautiful on the device. The Gorilla Glass screen gives an added protection to the screen and the Splash-proof coating protects the phone accidental spills.

The 1.0GHz quad-core MediaTek processor coupled with 2GB RAM is capable of smooth multitasking. The device runs the latest version of Android Lollipop v5.1 operating system.

The 8MP rear shooter is better for shooting when there is enough light and is not suited for low light conditions. The 5MP front snapper is good for selfie lovers and clicks good pictures.

We did not find any lag or hanging issues with the smartphone over the usage of 15 days. The smartphone packs whooping 4000 mAh battery that lasted for 7 hours 36 minutes in our video test, playing video over wi-fi with full brightness and sound.

Bottomline: The Lenovo Vibe P1M is another inclusion to Lenovo's budget smartphone category with right mix of features, the only let down being the cameras. So if you want a phone with great camera do check for other options in this budget.

KEY SPECS:
12.7cm (5") (1280 x 720) HD IPS display, MediaTek 1.0 GHz processor, Android 5.1, Lollipop, 4000 mAh battery, 2 GB RAM memory, 16 GB ROM storage, 148 g, 5 MP front camera and 8 MP rear camera, Dimension: 71.8 x 9.3-9.5 x 141 mm

PROS:
Battery life, splash and dust proof coating, good display

CONS:
Camera

WRITE TO:
Lenovo India, Bengaluru
Ph: 1-855-253-6686
Email: support@lenovoreg.com

MEIZU M2

Having a poly-carbonate uni-body construction, this smartphone looks good and offers decent performance

Price: ₹6,999

SCORE*

PRICE: **10**/10
PERFORMANCE: **7.1**/10
FEATURES: **8.1**/10

Overall: 8.4/10

Encased in polycarbonate unibody construction, the smartphone not only looks good but is sturdy as well. The major change from other phones is the presence of single physical home button at the bottom that packs a lot of functionality into it.

The 5" HD display delivers good colors and viewing angles, however we did notice slight shift in brightness when viewed off axis, which can be ignored considering the price. But most of the times interacting with the screen and colors looked accurate and natural and has plenty of brightness. The Asahi dragon trail glass is reflective and visibility is sub-par when you view in direct sunlight.

Meizu M2 runs on Meizu's custom Flyme 4.5 OS built on Android 5.1 Lollipop and feels smooth and fluidic. Like with most chinese interfaces there is no room for app drawer and all apps are hooked directly onto your home screen.

The 13 MP rear camera has good shutter response and is also relatively quick to focus. The colors and exposure was great however it missed out details. Just swipe down and you will be greeted with various camera modes. The 1080p recording was good and clear. The 5MP front shooter is good enough for selfies.

The 2500mAH battery lasted for approximately 4 hours 10 minutes in our video loop test.

Bottomline: As compared to Coolpad Note 3 Lite, the Meizu M2 falls short on extra gigabytes of RAM and is devoid of fingerprint scanner. If you can live without those, then this is a good buy.

KEY SPECS:
5-inch IPS HD display, Asahi Dragontrail protective glass, Mediatek ARM Cortex-A53 1.3GHz processor, Mali T720 GPU, 2GB RAM, 13 MP Rear Camera, 16GB Internal Storage, Wi-Fi, Bluetooth, Flyme 4.5 OS

PROS:
Price, decent battery, good performance

CONS:
Average sound, , no app drawer

WRITE TO:
Meizu Telecom Equipment Co., Ltd
Email: csindia@meizu.com

** All scores are relative to the top scorer in their respective categories.*

KARBONN QUATTRO L50

This beautifully crafted smartphone comes with Karbonn's new Kandy UI which gives it a new essence

Price: ₹7,990

SCORE*

9 10
MANCE: 4.5/10
S: 7.4/10

Overall: 6.9/10

Karbonn Mobiles comes with a new user interface in its new offering Quattro L50. With Quattro's Kandy UI, users can also customize the entire look and feel of the device.

The smartphone looks premium and the unit we received was dark royal blue wrapped with golden metallic strip across the borders. The back covers get velvet-matte finish which doesn't attract scratches, but prone to smudges. This has 5-inch HD IPS full lamination screen with 720p resolution, which produces rich colors and bright enough to be used in direct sunlight.

Inside the premium unibody, it hosts a 1.3 GHz Quad core processor, 2 GB RAM, and runs on Android 5.1. The combination makes it a powerful device that can handle productivity apps easily. It performed well and only a few times we were able to see a little lag in the performance while switching between apps., but its performance score is still average as compared to the top performer in this category. This 4G smartphone is equipped with 13 MP AF rear camera with LED flash. This capture quite good images in daylight conditions, but attracts noise with low-light shots. The 5 MP front camera is capable of capturing selfie and groufie, but don't expect much from this. The phone is packed with a 2600 mAh battery that lasts for a day about 9 hours with moderate usage.

Bottomline: Quattro L50 looks cool and performs well but the screen works like a magnet to finger prints and the front camera is also disappointing. It's priced well and the features are also decent, but performance is a little disappointing.

KEY SPECS:
5-inch screen (720x1280p), 1.3 GHz quad core CPU, 2 GB RAM, 16 GB ROM, 13 MP rar and 5 MP front camera, Android 5.1, 4G/LTE support, 2600 mAh battery

PROS:
Looks good, display, battery life, rear camera

CONS:
Screen is magnet to smudges, front camera

WRITE TO:
Karbonn Mobiles
E: info@karbonnmobiles.com

ZOPO COLOR E (ZP 350)

Equipped with front flash, this is a good attempted from the company, targeting selfie enthusiasts

Price: ₹7,899

SCORE*

PRICE: 9.1/10
PERFORMANCE: 5.8/10
FEATURES: 6.5/10

Overall: 7.1/10

Zopo Color E is built with durable plastic with curved edges warped with silver coated rim across the side panels. Front of the smartphone is a plane in design, hosting a front camera with LED flash.

Color E has a 5.0-inch display with a resolution of 720X1280p. The HD IPS Display produces vivid colors. With the wide viewing angles (178 degrees), this allows you to share the screen with friends and family while watching videos or enjoying movies. The display is bright enough you can easily use the smartphone in direct sunlight.

The smartphone is packed with a 64 -bit, Quad core 1.0 GHz MT6735P processor, 1 GB RAM, and runs on Android 5.1 Lollipop. There was no performance lag seen while playing some graphic intensive games such as Asphalt 8, Fifa, etc. but its performance score is still average as compared to the top performer in this category.

Zopo Color E boasts 8MP camera at the rear with LED flash. This captures decent images in daylight, but in low light conditions, noise can be seen easily. The front 2 MP front camera can be used to video chats and selfie.

The smartphone packs with 2100 mAh battery that lasts with you for more than a day. In our video test, it was able to play video for 5 hours 15 minutes over Wi-Fi with full brightness and volume.

Bottomline: Zopo Color E is a good attempt, but has only 1 GB RAM and has average camera and speakers performance.

KEY SPECS:
1.0GHz, Media Tek MT6735P Quad -core CPU,1 GB RAM, 8 GB ROM, 5.-inch HD (1280x720p) screen, Android 5.1, 8 Megapixel Rear and 2 Front Camera

PROS:
Build quality, battery backup

CONS:
Average camera, and speakers

WRITE TO:
Zopo Mobiles
Ph: 011-45587070-71-72

** All scores are relative to the top scorer in their respective categories.*

LAVA PIXEL V2

With an elegant design, decent performance, and a front LED flash, this will surely grab the attention of selfie lovers

Price: ₹9,999

SCORE*

PRICE: **7.6/10**
PERFORMANCE: **7.4/10**
FEATURES: **7.8/10**

Overall: 7.6/10

Lava's new offering Pixel V2 has a 5-inch touchscreen with 720p resolution and Asahi Dragontail Glass. It has two SIM slots and offers 4G connectivity. The back panel is removable and provides space for two SIM slots and microSD storage. Its battery is non-removable.

The smartphone boasts of a 5-inch display that's bright enough make texts readable in bright sunlight. With the good viewing angles, it produces vibrant colors. This smartphone is powered by a 64-bit MediaTek quad-core processor and 2 GB DDR3 RAM. The device has 16 GB of internal storage which can be further expanded up to 32 GB. The phone has a custom user interface called Star OS 2.0 which is based on Android Lollipop 5.1 operating system. The phone is capable of managing most of the tasks smoothly. In our testing, we played various games such as temple run 2 and Real Racing, but we didn't notice any performance lag.

The Pixel V2 has a 13 MP camera at the rear with dual led flash. This can click decent images but we missed details in the images. The low light shots we filled with noise as well. The front 8 MP camera is also accompanied with a flash, making it suitable for selfies in low light. It comes with various camera features including four modes – Video, Photo, Beauty-Fi and Night pro.

The Lava Pixel V1 is equipped with a non-removable 2500 mAh Li-Po battery that offers decent battery life. While testing the device, it lasted for about 9 hours with moderate usage. In our video test, it lasted for 5 hours 12 minutes playing video with full brightness and volume over Wi-Fi.

Bottomline: Lava Pixel V2 gives decent smartphone and has nice cameras with flash at both ends. It's a tad expensive, so go for it if you're crazy about selfies.

KEY SPECS:
Android 5.1 OS, 1.3 GHz quad-core CPU, 5 inches (1280x720P) screen, 4G support, 16 GB ROM, 8 MP front and 13 MP rear camera, 2500 mAh battery

PROS:
Design, camera, decent performance

CONS:
Low light images

WRITE TO:
LAVA International Ltd. Noida, (UP)
Ph: 120 463 7100

XIAOMI REDMI 2 PRIME

Prime is advanced version of Redmi 2, with better performance

Price: ₹6,999

SCORE*

PRICE: **10/10**
PERFORMANCE: **5.4/10**
FEATURES: **7.5/10**

Overall: 7.6/10

The Redmi 2 Prime smartphone is an advanced version of Xiaomi's existing Redmi 2. The way phone is designed, you hardly find any differences in comparison to its predecessor – Xiomi Redmi 2. Both phones are sharing the same design aesthetics. The Redmi 2 Prime can easily be handled with one hand, thanks to its smart dimensions and compact design, especially the curved rear edges, which are very smooth and feel good.

It has 4.7-inch, 720p IPS display with Dragon Trail scratch resistant glass which is pretty good for a phone under this range. The brightness level, contrast ratio, and touch response are good enough for day-to-day usage. Overall the display is small but bright and colorful. During our test, Redmi 2 Prime works pretty well with 2 GB RAM and 1.2 GHz Snapdragon 410 quad-core processor. Unlike the previous version of this phone, the Redmi 2 Prime performance is great. We played games like GT racing 2, Real racing 3 and Asphalt 8 and we didn't find any lag while playing games. However, its performance score is still average as compared to the Le 1S and Honor 5X.

The 4G compatible smartphone comes with 16 GB internal storage and backed by a 2200 mAh battery. The device can last with you for a day under 3G/2G networks while using Gmail, Whatsapp and other android background running apps. In our video test, it lasted for 4 hours and 10 minutes with full brightness and volume.

Bottomline: The Redmi 2 Prime runs smoothly and has a good rear camera, but a few things not going in its favor are its plastic build, an average front camera, and an older Android KitKat OS.

KEY SPECS:
4.70-inch display, 1.2GHz Snapdragon 410 quad-core processor, 8 Mp Rear and 2 Mp Front Camera, 2GB RAM, Android 4.4, 16 GB internal Storage, 2200mAh Battery Capacity.

PROS:
Smooth performance, good rear cameras, 4G compatibility, OTG cable support

CONS:
Plastic construction, front camera, still operating on Android KitKat

WRITE TO:
Xiaomi
Email: service.in@xiaomi.com

** All scores are relative to the top scorer in their respective categories.*

KULT 10

The minimalistic design smartphone packs a 5 inch HD display protected by Asahi's Dragontrail glass

Price: ₹7,999

SCORE*

PRICE: **9**/10
PERFORMANCE: **5.6**/10
FEATURES: **8.3**/10

Overall: 7.6/10

The 10 (Ten) by Kult smartphone has simple, minimalistic design. It has a 5 inch HD display protected by a fully laminated touch panel made using Asahi's Dragontrail glass and the back has sandstone finish like in OnePlus phones.

We used the Kult 10 smartphone review unit for almost a fortnight and being a affordable smartphone it worled fine , however camera department did not impressed us much. The HD IPS display with 450 nits of brightness displayed good colors be it playing games to watching videos to web surfing.

The 1.3 GHz processor coupled with 3GB of RAM did the fine job of multitasking, switching from one app to another and coming back without any performance lags. We also played some high end games like Asphalt 8 and it performed well, but its performance score is still average as compared to the top performer of the shootout.

The 13MP rear camera works good under daylight conditions and pictures came out with good colors and details. However in low light it lacks majorly and was not able to capture details.

The 10 (Ten) by Kult comes with 2350 mAh removable battery and can be charged from dead to 80% in almost 1 hour 30 minutes which is pretty much average given the size. It lasted for 5 hours 20 minutes in our video test, playing video over wi-fi with full brightness and sound.

Bottomline: Kult 10 is a good choice at this price. Go for it if you are more comfortable with a slightly smaller screen, but if you like larger screens, then go for the Coolpad Note 3 Lite, which is also 1000 bucks cheaper.

KEY SPECS:
5" HD display, 1.3Ghz Processor, 3GB RAM, 16 GB In-built memory, 13MP Rear Camera, 4G, Dual Slm, 2350mAH Battery

PROS:
Build quality, 3GB RAM

CONS:
Average camera performance

WRITE TO:
Kult
Email: customercare@kultlife.com

LE 1S

The smartphone offers impressive specifications and great design in an affordable package

PCQUEST Editors' Choice

Price: ₹10,999

SCORE*

PRICE: **10**/10
PERFORMANCE: **9.8**/10
FEATURES: **7.6** /10

Overall: 9.1/10

The sleek smartphone comes with black glass surrounding the screen and extending all the way to the two sides. The standard three capacitive Android navigation buttons are placed below the screen, hidden until you tap one. It looks great and thanks to thin bezls, they managed to bring 5.5-inch screen in a quite small body that can be easily handled. The power and volume buttons are on the right, 3.5mm audio socket on top, and Type-C USB port on the bottom. The Le 1s weighs 169g but somehow manages not to feel that heavy even with prolonged usage.

Performance: The 5.5-inch FHD delivered wide viewing angles and good brightness levels, allowing you to enjoy watching movies or playing games. It produces sharp colors and has a pretty loud and rich sound producing speakers.

This smartphone runs on Android 5.0.2 with LeEco's heavy eUI skin. It was the top performer in its category, and was miles ahead of many of the contenders.

Both cameras are good to shoot images in daylight, but we missed a little detailing in the images clicked by rear camera. It comes with various modes and features as well as enables you to click close-up shots which is quite good but with some noise. The 3000mAh non-removable battery lasted for 7 hours and 38 minutes beating both Acer Liquid Z630s and Infocus M680 in video test.

Bottomline: The smartphone's topnotch performance and attractive price tag make this a clear winner in this category. A definite thumbs up from us.

KEY SPECS:
5.5-inch (1920 x 1080 pixels) in-cell display, 2.2GHz Octa-Core Mediatek Helio X10 processor, PowerVR G6200 GPU, 3 GB RAM, 32 GB ROM, Android Lollipop based EUI 5.5, 13 MP rear camera with LED flash, 5 MP front-facing camera, 3000 mAh battery

PROS:
Premium looks, performance, display and speaker

CONS:
Non-expandable storage, average camera quality

WRITE TO:
Le 1S
Ph: 180030101838

** All scores are relative to the top scorer in their respective categories.*

HUAWEI HONOR 5X

The premium looking device is feature rich and offers good overall performance

Price: ₹12,999

SCORE*

PRICE: **8.8/10**
PERFORMANCE: **7.6/10**
FEATURES: **7.5/10**

Overall: 7.9/10

The smartphone has elegant looks and feels premium in hand. The back of it is entirely built with brush metal and so are the sides which are sandwiched between plastic at the top and bottom. The rear metal body looks premium yet prone to scratches, so you need to be a little careful while handling this.

Performance: The quality and color reproduction of display is excellent, the colors are vibrant and not too warm or saturated. You will see a noticeable black border around the screen which might be odd for some people but that does not create any problem while playing games or watching videos.

Thanks to a combination of good hardware we didn't find any difficulty while playing games and multitasking. The finger sensor recognizes the fingerprints at any angle with great accuracy. You can also use the biometric sensor to secure your apps and can also do other multiple things such as notification access, alarm silence, answer calls, clicking images and more.

The device runs on Android v5.1.1 with customized Huawei's EMUI 3.1 interface. We didn't find any changes in the interface look and is almost similar to other Honor series. You can also customize your phone by installing various themes and inbuilt options.

This comes with a 13 MP camera at the rear that captures beautiful images. It clicked pictures with rich colors and even the dim areas have decent amount of details. The 5 MP front camera is capable of taking some decent selfies.

The phone comes with 3000mAH non-removable battery that lasted for 5 hours and 46 minutes which is lesser to Le 1S having same battery capacity.

Bottomline: Honor 5X is another great choice and is rich in specifications with great display but looses to Le 1S in regards to design and features

KEY SPECS:
5.5 inches Full HD screen, 2GB RAM, Octa-core 1.5 GHz Cortex-A53, Android 5.1.1 Lollipop, 16GB inbuilt storage (expandable up to 128GB), 4G LTE, 13MP rear camera with LED flash, 5MP front-facing camera, fingerprint sensor, 3000 mAh battery

PROS:
Decent design and build, Great display, Reliable performance, Excellent fingerprint sensor

CONS:
Rear metal body prone to scratches

WRITE TO:
Huawei Telecommunication (INDIA) Co.
Ph: 1800-209-6555
Email: service.hw.in@huawei.com

ACER LIQUID Z630S

It has a good build and good aesthetics and packs a useful bundled apps like AcerEXTEND

Price: ₹10,999

SCORE*

PRICE: **10/10**
PERFORMANCE: **7.5/10**
FEATURES: **7.6/10**

Overall: 8.4/10

Acer Liquid Z630s is built with durable plastic having a plain design in front with round speaker gaze. The rear cover gets brushed metallic finish, which enhances its beauty. It fits easily into palm and is easy to hold even with one hand, thanks to its dimensions. The Liquid Z630s is also equipped with AcerEXTEND which connects wirelessly to a compatible laptop or PC and lets you view the phone's home screen in a phone-shaped emulator box on the computer.

Performance: The 720p display produces vibrant colors and has good viewing angles, but not wide enough so you can't share the screen with your friends and family. The display it bright enough to be easily used in direct sunlight without any issue. During our test, we didn't see any performance lag in the phone when playing games such as Fifa, Asphalt 8 and temple run 2 etc.

Key apps have been designed as "Float Apps" taking up only a portion of the screen so users can see and interact with the desktop below. This feature is available for maps, browser, notes, calendar and more, along with "Float Caller" which lets an incoming call pop up as a mini window for the user to choose whether to answer or reply with quick messages without interrupting the current session completely. The auto-focus 8MP rear camera is capable of capturing 1080p video, but the quality wasn't much impressive. The smartphone packs 4000 mAh battery that lasts for 6 hours 50 minutes of battery life in video test.

Bottomline: Overall, it's a great phone, with above average performance, but it could have done better on build quality, and had it also come with features like fingerprint scanner and a sharper display, it could have been the winner of this category.

KEY SPECS:
1.30 GHz MediaTek MT6753 Octa-core CPU, 3 GB RAM, 32 GB ROM, 5.5-inch HD (1280x720p) screen, Android 5.1, 8 Megapixel Rear and Front Camera

PROS:
Build quality, battery backup, nifty UI, performance

CONS:
Average video quality with rear camera

WRITE TO:
Acer India, Noida
Ph: 0120-3807200

** All scores are relative to the top scorer in their respective categories.*

VIVO Y27L

It offers Long Screenshot feature allowing you to scroll and take screenshots of as many pages you want and share it as a single image

Price: ₹12,999

SCORE*

PRICE: **8.8/10**
PERFORMANCE: **5.4/10**
FEATURES: **5.9/10**

Overall: 6.7/10

This is a light and sleek smartphone that measures only 6.99mm thick, with solid chassis and elegant design. However, you can easily find the resemblance of its with its previous models including Vivo V1, V1 Max, and Y22. The Vivo Y27L has a 4.7 inch HD display based on IPS technology that offers the HD resolution of 1280 x 720pixels.

It runs on VIVO own customized OS Funtouch-OS v2.0 based on Android KitKat v4.4 as the backbone. The Funtouch allows you to customize the skin as per your choice.

Performance: The smartphone's performance came out as average in the benchmarks, possibly because they stress it to the limits. If you don't stress it by loading too many apps, then even games like Asphalt 8 and Subway Surfer will run smoothly.

The 8 MP primary shooter and a 5 MP front camera can satisfy your daily life photo clicking needs. You also get different modes to take your pictures such as Auto, Beauty Face, best photo, continuous shot, HDR, children and 360-degree panorama. The 5 MP front camera lets you take selfies without any blur or graininess in Beauty, HDR, and Normal mode. The 8 MP rear camera produces pleasant and bright images in daylight. It has an LED flash at the rear that allows to capture memories even in low light conditions, but without flash it attracts noise. The smartphone is powered by a 2,260mAh battery that lasted for 6 hr and 12 mins in our video test.

Bottomline: The Vivo Y27L smartphone comes with a good camera and bright display, but is slightly overpriced as compared to Le 1S that offers more RAM and processing power. these help give it smoother multitasking than the Vivo Y27L.

KEY SPECS:
64-bit snapdragon1.2 GHz Quad core processor, Adreno 306, Android 4.4.4 based, 4.1 -inch HD IPS, 1GB RAM, 8 MP rear and 5MP front camera, 2260 mAh battery

PROS:
Good camera, attractive UI, lightweight and sleek

CONS:
Lags while multitasking

WRITE TO:
Vivo Mobile India Pvt. Ltd.
Email: vcare@vivoglobal.com

INFOCUS M680

An all-metal body smart phone which is as sturdy in build quality as it is appealing to the eyes

Price: ₹10,999

SCORE*

PRICE: **10/10**
PERFORMANCE: **5.2/10**
FEATURES: **6.6/10**

Overall: 7.3/10

The smartphone is covered with a metallic shell and gets a soft gold finish on the top and the sides dazzle with the diamond-cutting edges. The slim profile smartphone is only 7.2mm thick making it comfortable to hold. With 158 grams of weight, it packs a large 5.5-inch full HD display with a pixel count of 401 ppi.

Performance: The smartphone delivered good overall performance without any performance lag, but its performance score is still average as compared to the top performer in this category. The smartphone runs on Android 5.1 with the promise of a free upgrade to Android M. When playing games and watching videos, the sound delivered was not very good.

The 13 MP rear comes with Samsung 3M2 image sensor with an LED flash making low light or night images brighter. It can click detailed image using the flash in the dark, but with red eye effect. The daylight images are quite crisp and detailed. On the front, 13 MP camera is perfect for selfies and group snaps as well as video chats and comes with the best self-portraits in any lighting condition.

The 2600 mAh battery lasted for 7 hours on our battery test which is close to Acer Liquid Z630s(4000 mAH) with 6 hours and 50 minutes but falls short to Le 1S approximately by 40 minutes that packs 3000 mAH battery, all of which are competing at same price range

Bottomline: The InFocus M680 performs well, yet at the same price point you could get fingerprint scanner in Le 1S having good camera and build quality.

KEY SPECS:
1.5 GHz Octa core processor, 2 GB RAM, Android 5.1 (upgradeable to Android M), 5.5-inch FHD display with 401 PPI, 16 GB ROM, upgradeable up to 64 GB, 13 MP front and rear camera, 2600 mAh battery

PROS:
Bright display produces rich colors, slim profile, build quality, front and rear camera

CONS:
Average sound

WRITE TO:
InFocus
Ph: 9958002883

** All scores are relative to the top scorer in their respective categories.*

ZOPO SPEED 7 PLUS

The unibody design smartphone packs some handful of tricks onto the screen for added convenience

Price: ₹14,999

SCORE*

PRICE: **7.9**/10
PERFORMANCE: **8.2**/10
FEATURES: **6.9**/10

Overall: 7.6/10

With large 5.5-Inch display, this phablet has a unibody design with a plastic shell at the back and a brushed metal finish on the top. The rear panel looks good but attracts fingerprints. The screen has the multi-touch capability and it supports up to 5 touch at a time. The smartphone comes with Gesture Sensing that lets you open different apps by drawing different letters on the screen. With the screen off, double-tap the screen to wake, draw a "C" to open the camera. Just waving your hands allows you to view the next and previous pictures, there's no need to touch the screen anymore.

Performance: With rich and vibrant colors watching videos and playing games is a pleasure on this handset and the wide viewing angle enables you to share your screen with friends and family.

We played graphic intensive games on it apart from switching between apps and no lag was visible. Equipped with a 13.2 MP rear shooter with LED flash it enables you to capture precious moments in detail. The camera delivers crisp and beautiful images. We clicked indoor and outdoor images and the result was quite impressive. The front 5 MP camera also produces decent images and is perfect for both selfies and groufies. The phone comes bundled with various modes that allow you to capture images in the different environment. It also has Face Beauty 4.0 that works passively to make your selfies more beautiful.

The smartphone is packed with 3,000 mAh Lithium-poly battery that lasted 6 hours and 20 minutes in our video test.

Bottomline: Zopo Speed 7 Plus is overall a good phone, but at the lower price point you could get better features with Honor 5X and Le 1S.

KEY SPECS:
5.0-inch (1080 x 1920p) 441ppi display, 1.3 GHz Octa-core processor, 3 GB RAM, 16 GB ROM (expandable up to 64GB), 13.2 MP rear camera and 5 MP front camera, 2500 mAh battery, Z-UI based Android 5.1 Lollipop

PROS:
Bright and large display, battery life, performance, camera

CONS:
Build quality

WRITE TO:
Zopo Mobiles
Ph: 011-45587070-71-72

MICROMAX YU YUTOPIA

The phone features a Snapdradon 810 processor clubbed with 4GB of RAM to deliver snappy performance and great multitasking

Price: ₹24,990

SCORE*

PRICE: **7.8**/10
PERFORMANCE: **9.8**/10
FEATURES: **8.3**/10

Overall: 8.6/10

The smartphone features a rectangular unibody metallic design and has a thickness of 7.2mm that fits in the hand nicely. We personally did not like the protruding camera design as chances are pretty high that it will get scratched if you place it regularly on a hard surface. The device can record 4K video at 30fps and 1080p videos at 60fps and is also equipped with Optical Image Stablisation to prevent accidental shakes while clicking.

Micromax has also integrated Yutopia with a host of services to help the users organize most aspects of their daily life. Just slide right from the home screen and you will be greeted with Around Yu, which is a suite of services rolled into one discovery window for the users and surfaces results related to their queries such as hotel, cabs, restaurants, flight booking as well as shopping around them.

Performance: The Snapdradon 810 processor clubbed with 4GB of RAM delivered great performance and great multitasking. The Yutopia handles games, videos very well and the 2K display kicks in and colors displayed were great enhancing your game play experience. However we did notice heating of the device when used for a prolonged period. The 21MP rear shooter is capable of taking great shots with plenty of details but is a little slow. Although it will keep updating with the software updates.

Bottomline: Competing at a price of 24k, the Yu Yutopia is pretty impressive and comes as a complete package with great display, great performance, great camera and great battery life.

KEY SPECS:
5.2" Sharp WQHD IPS display, 4GB RAM, Snapdragaon 810 Processor, Adreno 430 GPU, Cyanogen OS 12.1, 21MP Camera, 5MP front camera, Quick Charge 2.0, Little Bird Headphones, 3000mAH battery

PROS:
2k screen, 4 GB RAM, quick charge, great display

CONS:
Protruding camera, gets heated while playing high-end games

WRITE TO:
Micromax House
Ph: +91-124-4811000

** All scores are relative to the top scorer in their respective categories.*

MOTO X PLAY

A rugged, beautiful smartphone tha
equips a powerful battery

Price: ₹18,999

SCORE*

PRICE: **9.6/10**
PERFORMANCE: **7.3/10**
FEATURES: **8.3/10**

Overall: 8.4/10

This smartphone has a plastic back cover, with a rubbery finish that feels really good and grippy. The company's trademark at curvy back is a icing on the cake. The thin bezels on the side of the large screen means the Moto X Play doesn't feel too bulky in hand. The 21 MP main camera comes with f/2.0 aperture having features like face detect autofocus, dual-tone LED flash and gesture controls.

It can capture 1080p video capture @ 30fps and also supports slow-motion video capture. Performance: The display is bright and vibrant and has highly responsive touch screen that works extremely well with slightest of touch.

It worked well in multitasking or playing heavy graphics intensive games like Asphalt 8 and dead trigger 2. Moto X Play offers pure Android and is completely customizable. The phone has no heating issues.

The camera is one of the best features of this phone. The day light shots are perfect and give us every detail. The 5 MP front facing camera with f/2.0 aperture takes good images. Low light performance is also excellent.

Moto X Play is equipped with huge 3630 mAH battery. However it only lasted for 4 hours 50 minutes which is disappointing given the size. The Le 1S, Acer Liquid Z630s performed better even with lesser battery size.

Bottomline: Moto X Play is a rugged phone having latest Moto camera and superb display with good design portfolio. The stock Android is good for those who want to customize their phones.

KEY SPECS:
5.5 inches IPS LCD 1080 x 1776 pixels, Resolution(~403 ppi),Gorilla Glass 3, CAMERA rear 21 MP, Front camera 5 MP,Android OS v5.1.1 OS (upgrdable to Android 6),Octa-core 1.7 GHz processor, 2 GB RAM, Internal 32 GB, microSD up to 128 GB, 3630mAh battery

PROS:
Good camera,Bright screen,Stock Android,front-facing speaker

CONS:
A little bulky

WRITE TO:
Motorola
Ph: 1-800-102-2344

** All scores are relative to the top scorer in their respective categories.*

OPPO R7 LITE

The beautiful smartphone encased in a metallic shell looks cool and offers seamless performance

Price: ₹17,990

SCORE*

PRICE: **10/10**
PERFORMANCE: **4.5/10**
FEATURES: **6.4/10**

Overall: 7/10

R7 Lite is a beautiful smartphone encased in a metallic back shell. The front is entirely covered with Corning Gorilla Glass 3 that protects it from scratches and smudges. At the rear, the aluminum panel feels solid and provides good grip. The secondary camera protrudes a bit outside which increase the risk of scratches when put on a flat surface. The R7 Lite uses a hybrid Dual-SIM system so you can either have two SIM cards or one SIM and a microSD card.

Performance: The 5-inch AMOLED display produces crisp colors and allows for easily readable texts even in direct sunlight. The display has 720p resolution which is relatively lower when compared to its competitors such as Moto X Play and Xiaomi Mi 4 which offer 1080p resolution.

The phone runs on Android 5.1 Lollipop and on top of it, Oppo has added Color OS 2.1 which looks pretty cool. To test the performance we played Asphalt 8 and FIFA simultaneously and the phone ran smoothly without any lag. But its performance score is still average as compared to Le 1S and Honor 5X. Equipped with a 13 MP sensor it clicks detailed images with crisp colors in daylight. Oppo offers a variety of shooting modes which allow you to tweak your images. We clicked images in different modes to test the camera performance. In all the modes, camera did well and produced decent images with rich colors and details.

Oppo R7 Lite is powered with a non-removable Li-Po 2320 mAh battery that can last for 4 hours and 16 minutes in our video test.

Bottomline: Oppo R7 Lite not only feels premium but also offers seamless performance. It has a bright display but with lesser resolution as compared to Moto X play.

KEY SPECS:
5-inch AMOLED display (720 x 1280 pixels), Corning Gorilla Glass 3, Android OS, v5.1 (Lollipop), 1.5 GHz Quad-core CPU, Adreno 405 GPU, 2 GB RAM, 16 GB internal memory expandable up to 128 GB, 13 MP rear and 8 MP front camera, non-removable Li-Po 2320 mAh battery

PROS:
Bright display, slim profile, great design, stunning camera

CONS:
Low resolution 720p

WRITE TO:
Oppo Mobiles India Pvt Ltd.
Ph: 0124-4727777
Email: oppoindia@oppmobile.in

ASUS ZENFONE ZOOM

An expensive smartphone that comes with real zoom lens for photography enthusiasts

Price: ₹37,999

SCORE*

PRICE: **9.5**/10
PERFORMANCE: **9**/10
FEATURES: **8.1**/10

Overall: 8.9/10

Asus Zenfone Zoom comes with a 5-mm metallic unibody and burnished leather rear cover. The smatphone looks pretty cool and while holding the device it does offer rich feeling. It produces vibrant colors and bright enough to be used even in direct sunlight.

Zenfone Zoom camera is Coupled with a Panasonic SmartFSI image sensor as well as has 3X optical zoom with 10-element HOYA lens arrangement that enables close-ups with up to 12X total magnification. While testing the camera we clicked various images from a distance using the zoom and it did pretty well. Also with close-ups, it did pretty good job. The phone also comes with built-in optical image stabilization (OIS) to eliminate shakes and blurred shots. The front 5 MP camera captures beautiful images in both daylight and lowlight. This is perfect for capturing selfie and groufie.

Zenfone Zoom is powered by quad-core Intel Atom processor with 4GB of dual-channel LPDDR3 RAM, runs on Android 5.0, which is older version and we were expecting the latest one. This comes with 128 GB of internal storage, means you have plenty of space to save lots of images, videos and other data. It also features LTE Category 4+ for down-load speeds up to 250Mbps, and a 60ms touch-response time.

Bottomline: Asus Zenfone Zoom is a real pleasure for your eyes. With bright and vivid display, this packs 3X optical zoom capability that enables you to capture live moments in detail. With huge 128 GB inbuilt memory and 4 GB RAM, this is right device to spend 38K.

KEY SPECS:
5.5-inch IPS capacitive touchscreen, 16M colors, 128 GB ROM, microSD (up to 64 GB), 4GB RAM, 13MP rear camera with laser autofocus, 3x optical zoom, OIS and dual-LED (dual tone) flash, 5 MP front camera, Android 5.0, Quad-core 2.3 GHz Intel CPU, 3000mAh Li-Po battery

PROS:
Quad HD+ Display, fast performance, great design, long battery life

CONS:
Older Android 5.0

WRITE TO:
Asus India, Mumbai
Ph: 022-61598612

HTC ONE ME

The phone provides smooth multitasking experience and brilliant snaps

Price: ₹35,465

SCORE*

PRICE: **10**/10
PERFORMANCE: **5.2**/10
FEATURES: **7.2**/10

Overall: 7.5/10

The smartphone comes with metal and plastic construction but catches smuges and fingerprints easily. The curved back casing makes it easy to grip in the hand at all times. HTC One ME has a 5.2-inch IPS display panel with screen resolution of 1440x2560p i.e 2K or QHD which is more than ASUS Zenfone Zoom and Nexus 5X. The fingerprint scanner is also pretty fast and sensitive and unlocks the handset within seconds. One ME comes preinstalled with the Fun Fit fitness tracking app. This app is pretty useful and tracks the number of steps taken, calories burnt, etc.

Performance: The viewing angles are very good as well, so you won't have any trouble even if two or more people watch videos on the phone at the same time. The Quad HD screen delivered great contrast and brightness levels. The 20 MP camera of HTC ONE ME is really good and fast and can capture great shots. The smartphone comes with 32 GB of internal storage and supports microSD cards of up to 2 TB capacity which is one of the highest. One ME runs smoothely without any performance lag, but its performance score is still average as compared to the top performer in this category.

Bottomline: HTC ONE ME is capable of smooth multitasking and delivers good camera performance but did not capture shots like ASUS Zenfone Zoom. The BoomSound speakers with Dolby Audio and the QHD screen did make for a great combination for multimedia consumption

KEY SPECS:
5.2 inches 1440 x 2560 pixels (~565 ppi), Android v5.0.2 OS, Octa-core 2.2 GHz, 3 GB RAM, Internal storage 32 GB, Expendable up to 2TB, Rear Camera 20 MP, Front camera 4 MP, Dual SIM, Non-removable Li-Po 2840 mAh battery

PROS:
Fast and smooth performance, good screen and audio, good camera

CONS:
Frequent heating on gaming and a little expensive

WRITE TO:
HTC India, Delhi
Ph: 011-46331011

** All scores are relative to the top scorer in their respective categories.*

LG G4

With a pair of great cameras, a newer version of LG UI 4.0 and a refreshing leather back panel, the LG G4 is a great phone to flaunt

Price: ₹46,500

SCORE*

PRICE: **8.1/10**
PERFORMANCE: **7.4/10**
FEATURES: **6.4/10**

Overall: 7.3/10

With a slight curve in its screen and an leather back the LG G4 is a refreshing change from the traditional flat and metallic phones. The LG G4 is the also the first smartphone to use a new 5.5-inch IPS Quantum Display, which offers 20 percent greater color reproduction, 25 percent improvement in brightness and 50 percent greater contrast. The 2,560×1,440-pixel resolution and 534 pixels per inch (ppi), puts it above the Apple iPhone 6, Nexus 5X and HTC One M9. The volume controls can also be used to scroll the web pages while browsing.

Quantum display and how is it different from other displays?: The G4 screen closely matches the standards used by Hollywood movie studios, dubbed DCI or Digital Cinema Initiatives and offer 98 per cent of the DCI color gamut with deeper saturation in the reds and blues, and generally looks better than the common sRGB standard.

Performance: The device delivered snappy performance all around without any lag. With a 16 MP camera, the LG G4 can shoot both raw and jpeg file format and is good and fast. The shots have rich colors, fine details and the images look just brilliant. Turn on Voice Control in the settings and say words like "Cheese", "Capture", "Smile", "LG", "Whiskey" to instantly take a photo hands-free without touching the screen. With GlanceView, you can also check the time, date and any missed notifications on the sleeping screen by swiping your finger downward from the top edge.

Bottomline: The LG G4 is an excellent big-screen smartphone that impressed us in every aspect. Even with IPS Quantum Display, Raw image shooting capability that is beneficial for photo editors to produce high fidelity images, the device lacks on internal storage, zooming capability offered by ASUS Zenfone Zoom that comes at a lower price

KEY SPECS:
IPS Quantum Display Capacitive, QHD Resolution, Gorilla Glass 3, Android 5.1 Lollipop, LG 4.0 UI, Qualcomm Snapdragon 808 processor with 1.8 GHz 64-bit Hexa-Core CPU, Adreno 418 GPU, 3GB, 16MP Rear Camera with Laser Auto Focus, 8 MP Front Camera.

PROS:
Powerful bright display, camera, snappy performance, raw image shooting, expandable storage

CONS:
Gets heated while charging

WRITE TO:
Write to: LG Electronics India Pvt. Ltd.
Ph: 0120-2560900

LG NEXUS 5X

Nexus 5X is the successor to Nexus 5 launched two years back and now comes loaded with latest version of Android and many other improvements

Price: ₹35,900

SCORE*

PRICE: **9.9/10**
PERFORMANCE: **6.6/10**
FEATURES: **5.7/10**

Overall: 7.4/10

Devoid of metallic body, it does not look cheap at all and the build is put together really well and feels light as compared to metal counterparts. It also has ambient display and allows you to see notifications without unlocking your device. Thus if you've received new notifications, and you want to view them without having to unlock your device, simply lift your device up and the ambient display kicks in. The Nexus 5X is equipped with USB Type C port and supports faster charging meaning you can easily get 5-6 hours of usage by plugging in just for 15 minutes.

Performance: The device delivered smooth performance all around but at times lagged while switching between apps when fully loaded. It also shoots 4K-resolution video, which definitely seemed sharper than its 1080p and puts him above LG G4, ASUS Zenfone Zoom. The camera delivered plenty of sharpness and images looked detailed and vibrant and not overly saturated. Although it lacked Optical Image Stabilization the images in low light conditions looked decent and without any hint of blurriness.

Bottomline: The LG built Nexus 5X is a well designed device with nice and clean hardware and is a worthy successor to Nexus 5. It is not the best phone but is one of best considering the price range, and if you are a Nexus fan and want a refresh of Nexus 5, and do not want to stay in queue for updates, this is a device for you.

KEY SPECS:
Android 6.0 Marshmallow, 5.2 inches FHD (1920x1080) LCD at 423 ppi, Corning Gorilla Glass 3, 12.3MP Rear Camera, 4K (30fps) video capture, 5MP Front Camera, Qualcomm Snapdragon 808 Processor, 1.8GHz hexa-core 64-bit, Adreno 418 GPU, RAM: 2GB LPDDR3, 16GB/32GB, Weight: 136 g, Micro USB Type-C, 3.5 mm audio jack, Battery: 2,700 mAh

PROS:
Good build quality, Good finger print scanner, Lightweight

CONS:
Camera app hesitates for a moment while opening Performance lags a bit when phone is fully loaded with apps.

WRITE TO:
LG Electronics India Pvt. Ltd.
Ph: 0120-2560900,

** All scores are relative to the top scorer in their respective categories.*

HOW THEY COMPARE

	Name	Pricing (Rs)	O.S	Processor	Display Size (Inches)	Display Resolution (Pixels)	Connectivity, Ports, and Sensors	Storage-Internal (GB)	Storage-External (GB)	RAM (GB)	Camera-front (MP)	Camera-rear (MP)	Battery (mAh)
BUDGET	Acer Liquid z530	6,999	Android 5.1	1.3 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS	16	32	1	8	8	2420
	Coolpad Note 3 Lite	6,999	Android 5.1	1.3 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS,fingerprint	16	32	3	5	13	2500
	Xiaomi Redmi 2 Prime	6,999	Android 4.4	1.2 GHz Quad Core	4.70	1280x720	4G, WiFI, GPS	16	32	2	2	8	2200
	Meizu M2	6,999	Android 5.1	1.3 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS	16	128	2	5	13	2500
	Zopo Color E	7,899	Android 5.1	1 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS	8	64	1	2	8	2100
	Lenovo Vibe P1m	7,999	Android 5.1	1 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS	16	32	2	5	8	4000
	Karbonn Quattro L50	7,999	Android 5.1	1.3 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS	16	32	2	5	13	2600
	Kult 10	7,999	Android 5.1	1.3 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS	16	128	3	5	13	2350
	Lava Pixel V2	9,999	Android 5.1	1.3 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS	16	32	2	8	13	2500
LOWER MID RANGE	InFocus M680	10,999	Android 5.1	1.5 GHz Octa Core	5.50	1920x1080	4G, WiFI, GPS	16	64	2	13	13	2600
	Acer Liquid Z630s	10,999	Android 5.1	1.3 GHz Octa Core	5.50	1280x720	4G, WiFI, GPS	32	32	3	8	8	4000
	Le 1S	10,999	Android 5.1	2.2 GHz Octa Core	5.50	1920x1080	4G, WiFI, GPS	32	—	3	5	13	3000
	Vivo Y27L	12,999	Android 4.4	1.2 GHZ Quad Core	4.10	1280x720	4G, WiFI, GPS	16	128	1	5	8	2260
	Honor 5X	12,999	Android 5.1	1.5 GHz Octa Core	5.50	1920X1080	4G, WiFI, GPS,fingerprint	16	128	2	5	13	3000
	Zopo Speed 7 Plus	14,999	Android 5.1	1.3 Ghz Octa Core	5.50	1920x1080	4G, WiFI, GPS	16	64	3	5	13.2	3000
UPPER MID RANGE	Oppo R7 Lite	17,990	Android 5.1	1.4 GHz Quad Core	5.00	1280x720	4G, WiFI, GPS	16	128	2	8	13	2320
	Moto X Play	18,999	Android 5.1	1.7 GHz Octa Core	5.50	1776x1080	4G, WiFI, GPS	16	128	2	5	21	3630
	Micromax Yu Yutopia	24,999	Android 5.1	2 GHz Octa Core	5.20	2560x1440	4G, WiFI, GPS	32	128	4.00	8	21	3000
HIGH END	HTC One ME	35,465	Android 5.1	2.2 GHz Octa Core	5.20	2560x1440	4G, WiFI, GPS	32	128	3	4	20	2840
	Nexus 5X	35,999	Android 6	1.8 GHz Hexa Core	5.20	1920x1080	4G, WiFI, GPS	16	—	2	5	12.3	2700
	ASUS Zenfone Zoom	37,999	Android 5.1	2.3 GHz Quad Core	5.50	1920x1080	Optical zoom, 4G, WiFI, GPS	128	64	4	5	13	3000
	LG G4	46,500	Android 5.1	1.44 GHz Quad Core	5.50	560x1440	4G, WiFI, GPS	32	128	3	8	16	3000

TAG All-in-One HDD Docking Station

Price: ₹2,500

KEY SPECS

- Supports all 2.5"/3.5" SATA/IDE Hard Disk Drive of any capacity
- One Touch Backup function
- 2 USB 2.0
- XD/CF/TF/SD/MS card reader and eSATA port

Supports SSD and HDD of 2.5 and 3.5 inch, SATA, and IDE connectivity, includes almost every port to connect various cards and drives

None

TAG all-in-one HDD docking station has the capability to hold 2.5 or 3.5 inch SATA HDD or IDE hard drives of up to 2 TB. You can easily mount any drive on it using simple to attach and remove dock. This docking station is a right solution if you are looking for a station where you can connecte almost every type of drive from SD card, HDD, SDD, etc. This dock will help you to connect all the drives easily with your PC or laptop.

SCORE

PRICE: **9/10**
PERFORMANCE: **9/10**
FEATURES: **9/10**

Overall: 9/10

Digisol DG-VG4300NU

Price: ₹3,999

KEY SPECS

- VDSL support up to 100Mbps download speed
- 3G/4G Dongle Support, Gigabit E-WAN Port Supported
- WAN Failover function supported
- Parental Control, compatible with ADSL line
- IPv6 Ready

Good performance, affordable, suitable for homes and small offices, simple UI, life time warranty

None

DIGISOL DG-VG4300NU is a VDSL2/ADSL2+ router, comes with 4 ports 10/100Mbps auto MDI/MDIx Ethernet Switch and IEEE 802.11b/g/n wireless connectivity. It is an affordable router for homes and small offices that can h the load of several connections. It can be setup easily, an ignal strength.

SCORE

PRICE: **9/10**
PERFORMANCE: **9/10**
FEATURES: **9/10**

Overall: 9/10

ENRG Actiwear

Price: ₹2,999

KEY SPECS

- IOS & Android Connectivity
- Zeroner Health App Connectivity
- Bluetooth connectivity
- Li-on battery
- Sweatproof

OLED screen, battery life, zeroner app

None

ENRG Actiwear is a good band that provides 5 days battery life and track your daily activities. This is a right device for users looking for an affordable health band, however, the cost is little higher, but considering the battery life, OLED screen and other features, this justifies its cost.

CORE

PRICE: **7/10**
PERFORMANCE: **8/10**
FEATURES: **8/10**

Overall: 8/10

reviews, visit **www.pcquest.com**

Tukzer 10000 mAh Power Bank

skin4gadgets.com Price: ₹2,499

KEY SPECS

- 10,000 mAh battery, two USB 2.0 ports, one Micro-USB port
- Over-discharge and Overcharge Protection
- Short-circuit Protection
- High-Temperature Protection, indicative LED lights

Stylish skin, build quality, 2 USB ports, Over-discharge and Overcharge Protection, Short-circuit Protection, High-Temperature Protection

Expensive

Tukzer Power Bank has 10,000 mAh battery capacity that can charge up to 4 devices on the go, depending on their battery capacity. The power bank comes with over-discharge and overcharge protection, short-circuit protection and high-temperature protection. However, with all the essential features, this stylish power bank comes at a higher price point.

SCORE

PRICE: **7/10**
PERFORMANCE: **9/10**
FEATURES: **6/10**

Overall: 6/10

Videocon 40" Liquid Luminous Full HD LED TV

Price: ₹41,990

KEY SPECS

- 40" Full HD Screen, Android 4.4 KitKat, 20W Audio Output
- 4 X HDMI V 1.4, 3 USB 2.0 mpeg, MHL (Mobile High definition link)
- Dimension(with stand): 898x211x585
- Weight(with stand): 8.2 kg

DDB, remote control is easy to use, good picture quality over other set-top boxes

Slight lag when changing the channels

In terms of picture quality, I will not put this TV on the top list but it's likely good enough for most viewers. It delivered good contrast ratio, decent and accurate color production and so was the sound quality.

SCORE

PRICE: **8/10**
PERFORMANCE: **8/10**
FEATURES: **8/10**

Overall: 8/10

Quantum Hi-Tech QHM 288 USB Mouse

Price: ₹450

KEY SPECS

- LED Lights
- 7 different hues
- 1200 DPI

Colorful LED Lights, ergonomic design, comfortable to hold

None

Quantum Hi-Tech QHM 288 mouse is embodied with laser cut technology, for three colorful LED Lights that shift through a Kaleidoscope of 7 different hues. The mouse changes the colors while in use and looks quite catchy. It's light, has ergonomic design, perfect for both work and play. With 1200 DPI, it performs well and comes at an affordable price.

SCORE

PRICE: **9/10**
PERFORMANCE: **9/10**
FEATURES: **8/10**

Overall: 9/10

For detailed reviews, visit **www.pcquest.com**

ENTERPRISE IT

VMWARE ACCELERATES THE SHIFT TO DIGITIZATION AND HYBRID CLOUD WITH THE INTRODUCTION OF VREALIZE SUITE 7

The suite combines VMware's cloud automation, cloud operations and cloud business management solutions into an integrated platform that enables IT to deliver unified services at the speed of business, but with the control and cost efficiency that IT requires. This new edition includes all of the capabilities necessary to address intelligent operations management for infrastructure. It delivers management analytics that address health, performance and capacity management across all infrastructure domains of a heterogeneous, hybrid cloud. It also includes log analysis capabilities. The VMware vRealize Suite is also available in Advanced and Enterprise Editions.

HITACHI DATA SYSTEMS RELEASES ENTERPRISE FILE SYNC, SHARE AND COLLABORATION SOLUTIONS

Hitachi Content Platform (HCP) allows service providers and IT organizations to quickly and easily deliver the most secure content mobility solution offered by HDS to their users under their own brand. HCP Anywhere v.2.1 brings new features that allow external parties to upload data to shared HCP Anywhere folders, enhance team folders, and evolve beyond file sync and share with new data protection tools for end-user files. This new release also includes enhancements that further improve the security, ease of use, and intelligence of underlying storage and network resources.

MOBILITY

SEE THE BEST TWEETS FIRST WITH TWITTER NEW HOME TIMELINE FEATURE

Twitter's new timeline feature will surface relevant Tweets based on information like who you follow and what you engage with so the content that is interesting to you is easy to discover whether you stay on Twitter all day or visit for a few minutes. Here's how it works. You flip on the feature in your settings; then when you open Twitter after being away for a while, the Tweets you're most likely to care about will appear at the top of your timeline still recent and in reverse chronological order. The rest of the Tweets will be displayed right underneath, also in reverse chronological order, as always. At any point, just pull-to-refresh to see all new Tweets at the top in the live, up-to-the-second experience you already know and love.

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MOBILITY

FLIPKART ANNOUNCES SPOTLIST TARGETING SMES, ARTISANS

A one-of-a-kind initiative, Spotlist aims to provide sellers with the infrastructure and training that are vital to improving their visibility and competitiveness on Flipkart's e-commerce platform. Spotlist enables sellers to catalogue their selection in the shortest possible time. In addition to enabling sellers irrespective of size and selection, Spotlist extends the benefits to other functions within the e-commerce ecosystem. For instance, freelance wedding and party photographers may register with Flipkart as cataloguing partners and open a new revenue stream for themselves.

HOT LAUNCHES

MOTO X FORCE SMARTPHONE WITH SHATTERPROOF DISPLAY LAUNCHED AT RS.49,999

The Moto X Force display is made of an integrated system of five layers that absorb shock from impact and the company guarantees that the screen will not shatter. This means, its ultra hi-res 5.4" Quad HD AMOLED display will always bring your photos and videos to life. In fact, this 1440p display with 540ppi renders 77% more pixels than a full HD (1080p) display. Under the hood Moto X Force is powered by Qualcomm Snapdragon 810 processor with octa-core CPUs, and 3GB of RAM. The latest smartphone has 21MP PDAF camera and a 5MP wide angle front-facing camera with flash for selfies. The device features 3760mAH battery and Moto claims the battery life of 30 hours.

FREEDOM 251: THE WORLD'S MOST AFFORDABLE SMARTPHONE

At ₹251, the Freedom 251 can comfortably be considered as the world's cheapest smartphone. Specs of the Freedom 251 are amazing at this price–a quad core processor running at 1.3 GHz, 1 GB RAM, 8 GB of internal storage, which is expandable to 32 GB, a 3.2 MP rear camera and 0.3 MP front camera, with a 1450 mAH battery. Apparently, the phone is being launched with 'immense' support from the govt. Everything in the Freedom 251 is apparently going to be manufactured in India, and is being considered as a success story of PM Modi's Make in India campaign. As expected, the smartphone is surrounded with controversy, so what is finally delivered (or not delivered) remains to be seen!

CANON BRINGS 4K CAPABLE EOS-1D X MARK II DSLR CAMERA

The EOS-1D X MARK II brings together the latest developments in imaging technology and innovations in the EOS line to present a next-generation pro DSLR model, empowering users to push their boundaries in capturing the best shots. The Full HD recording feature comes with a new High Frame Rate mode that allows recording at 120/100, enabling slow motion video recording. With the addition of the Dual Pixel CMOS AF (DAF), a first in the EOS-1D series, users utilising phase-detection in Live View mode benefit from extremely fast auto-focusing and efficient tracking of moving subjects without aperture limitations. Priced at INR 4,55,995 for the body, the product will be available from April.

HP INK TANK PRINTERS FOR SMALL BUSINESSES LAUNCHED STARTING @ ₹13041

HP unveiled the new HP DeskJet GT series that fuels small businesses using ink tanks with a wireless printer that can print thousands of pages affordably. The new HP DeskJet GT series makes high quality and reliable printing more affordable, while making printing and ink refill easy and fuss-free. The HP DeskJet GT series prints up to 8,000 pages with a set of three HP spill free colour bottles and up to 5,000 pages with the HP spill-free black pigment ink bottle out of the box. Each ink bottle is available at Rs. 498. Original HP inks are specially formulated to deliver sharp text, vibrant graphics and photos that resist water and fading,and deliver high quality marketing materials and business documents. The HP Deskjet GT 5820 All-in-One printer is priced at ₹14,670 and the HP Deskjet GT 5810 All-in-One printer is priced at a ₹13,041.

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